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VERTEX PRESENTATION WITH THE OCCIPUT POSTERIOR—THE MOST FREQUENT CAUSE OF INTERVENTION IN LABOR.*

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Perusal of the mortality statistics of childbirth in the birth registration area of the United States, which now embraces forty of the forty-eight states, affords scant comfort for one who wishes the best of obstetrical practice in his own country. The average maternal mortality, expressed as deaths per 10,000 live births, for the thirteen years from 1915 to 1927 inclusive, is 69.0, the lowest rate being for 1915, 61, and the highest for 1918, 92. This average rate of 69.0 for the birth registration area may be compared with the average rates for the following countries during the same period:

Denmark	23.2
Netherlands	26.1
Sweden	26.7
Norway	27.9
Uruguay	28.0
Italy	28.2
Hungary	30.1
Czechoslovakia	32.7
Japan	33.5
Finland	35.0
England and Wales	40.1
Switzerland	47.8
North Ireland	48.1
Germany	48.5
Irish Free State	49.8
Spain	51.2
New Zealand	52.1
Australia	52.5
Salvador	53.8
Canada	55.5
Belgium	58.0
Scotland	62.5
United States	69.0
Chile	72.4

It is useless for the medical profession to attempt to avoid the full implication of these statistics: We only get deeper in the mire. The returns show that in not one, but several states the counties with the largest number of births reported by midwives show the lowest maternal mortality rates, a finding certainly barren of comfort for the medical profession. Furthermore, the average rates for the thirteen years ending in 1927, for the urban and rural sections of the birth registration area in the United States are 75.3 and 62.1 respectively. Are these figures to be entirely explained on the basis of a supposedly better average health in the country? I think not. Lest some critic with more courage than knowledge should now come forward to claim that the situation in the country as a whole can certainly not accurately reflect that in the capital of the nation, let us now look into our local statistics. The average rate for the District of Columbia for the thirteen year period ending with 1927 is 89.7, which is 20.7 points higher than the rate of 69.0 for the birth registration area as a whole for the same period, and 14.4 points higher than the rate of 75.3 for the urban portion of the whole area. The large proportion of negroes in our population is sure to be advanced as a factor in the production of our high rates, but, fortunately or unfortunately, depending on the point of view, statistics are available on this point. Thus, our average rate for whites is found to be 71.5 and for colored 132.1, comparable to rates of 65.4 and 116.2 for the registration area as a whole for white and colored women respectively.

Recently Dr. Dorothy Reed Mendenhall, in a bulletin of the Children's Bureau of the Department of Labor entitled, "What is Happening to Mothers and Babies in the District of Columbia," has called attention to additional unfavorable aspects of our local statistics. She shows that a comparison of the average maternal death rate of Washington for the years 1924, 1925 and 1926 with that of five other cities with 2,000 or more colored births annually, shows a rate of 9.6 per 1,000 live births for Washington against rates for the same period of 5.6 for New York, 5.9 for Chicago, 6.6 for Baltimore, 7.3 for Detroit and 7.6 for Philadelphia. For the same period, in Washington,

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the average rates for white and colored, 7.3 and 14.6 respectively, are higher than those of any of the five cities named. May not our local situation be tersely summed up by the statement, unfortunately true, that it is three times safer for a white woman to have a baby in Denmark than in the District of Columbia?

It is not my purpose in this paper to attempt an elaborate investigation of the factors responsible for this local and national disgrace. Many might be mentioned, such as fundamental errors of omission and commission in obstetric teaching in the medical schools, lack of appreciation by the public of the dignity and importance of obstetric practice resulting in inadequate compensation of the obstetrician, various economic and social factors, and, finally, but not least in importance, the attempt of some of us medical men-in-the-street to emulate and follow the teaching of certain radical but highly placed clinicians who, because of the skill which comes with much practice and the facilities of their great clinics, to put it in the vernacular—"get by with murder." But when everything is done and said, in order to insure her safety, the woman who is to be blessed with a normal labor needs but ask two things of her medical attendant—that he keep clean and leave her alone. Danger, then, begins with intervention, for, without this, even uncleanliness is comparatively innocuous. There are, unfortunately, all too many legitimate indications for intervention and many illegitimate reasons which, from time to time, have their vogue. Face, brow, breech, and transverse presentations, serious pelvic contraction, eclampsia, placenta praevia, ablatio placentae, cardiac decompensation, prolapse of the cord—all these come trouping to mind. But how often do we have these conditions to handle? Does their mismanagement account for our bad results? In some small degree, yes, of course, but certainly not for most of them, because of the comparative rarity of such complications. If, then, we who do obstretrics ask ourselves the question—What is the most frequent cause of difficulty in and consequent interference with labor?—the answer must be immediate—posterior varieties of vertex presentations. According to the most commonly accepted statistics, these have an incidence of about 20 per cent of all labors, being seen about six times more frequently in the right position than in the left. Unfortunately, in my experience, these figures materially underestimate the frequency of R. O. P. My observation leads me to believe that a primary R. O. A. is more rarely seen than an L. O. P. and that the two together do not constitute 5 per cent of vertex cases. If this be accepted it follows that 95 per cent of vertex cases are either L. O. A. or R .O. P., and I would place these in a relative frequency of about 60 per cent and 40 per cent respectively. Therefore, I am led to believe that in at least 40 per cent of all labors the obstetrician has to do with a posterior vertex presentation. These are the reasons which have led me, in an effort to make a very small and humble contribution looking toward the betterment of our local obstetrical results, to review this subject with you tonight, although I am fully aware that most of you are as familiar with it and as competent to handle it as I am.

Etiology

The cause of a posterior vertex is to be looked for in the most trivial departure from the completely successful operation of the law of accommodation which normally orients the fetus in its relation to the pelvis. This law predicates simply that the relation of the contained fetus to the containing uterus and of the contained uterus to the containing abdominal cavity will be that in which there is the most accurate coincidence between the contained and containing body. Hence, both the fetus, in its normal flexed attitude, and the uterus being ovoid in shape, the first major accommodation will be the coincidence of the two long axes—result, longitudinal presentation. Second, the flexed head, being less obtuse than the breech, will be made to coincide with the more pointed lower or cervical pole of the uterus—result, vertex presentation. Third, the longer of the two short diameters of the fetal ovoid, being an anterio-posterior one from the spine to the front of the flexed extremities, is accommodated in the longer transverse diameter of the uterus, and the latter, undergoing a torsion on its long axis through an angle of forty-five degrees, from left to right in the great majority of cases, the fetal back will come to lie above the left ilio-pectineal eminence or the right sacro-iliac synchondrosis—result, L. O. A., or R. O. P. Fourth, the lateral margin of the uterus containing the broad, smooth, convex surface of the fetal back will be more accurately accommodated in the broad, smooth concavity

of the inner surface of the anterior abdominal wall than in the narrow, deep fossa to the right of the spine—result, L. O. A. Finally, only in cases where this last accommodation fails, and the broad back remains in the narrow posterior fossa, will a posterior vertex be produced. It will thus be seen that the relatively high frequency of the posterior vertex in comparison with other abnormal presentations is readily accounted for, since its production involves only the most trivial and minor departure from the entirely successful operation of the law of accommodation.

The Mechanism

Since a sound basis for any intervention with labor must be predicated on a thorough understanding of the mechanism involved, it is necessary now to consider the points of departure of the mechanism in R. O. P. from that in L. O. A. These differences are noted at two points, namely, in the mechanism of engagement and in that of internal rotation.

The attempt at engagement in both L. O. A. and R. O. P. occurs with the long diameters of the head in the right oblique diameter of the pelvic inlet, the occiput being anteriorly directed in the former, and posteriorly in the latter. The important difference lies in the relation of the bi-parietal diameter to the pelvic brim. This diameter lies much nearer the occiput than the sinciput, with the result that in L. O. A., since the occiput is anteriorly directed, it occupies the left oblique diameter of the inlet with normally over three centimeters of space to spare. In R. O. P., however, the occiput, being posteriorly placed at the right sacro-iliac scynchondrosis, the bi-parietal diameter is thrown so far back in the pelvis that it comes to lie not in the left oblique but in a diameter, the sacro-cotyloid, extending from the mid-line at the sacral promontory to the right ilio-pectineal eminence. This diameter is barely sufficient for its accommodation, and in many cases moulding of the head is necessary to shorten the bi-parietal diameter for its passage.

The most striking difference in the mechanism, however, is seen in connection with internal rotation. In L. O. A., the long antero-posterior diameters of the head, still in the right oblique, are driven down against the gutter of the pelvic floor. Because of the shape of this gutter, with its sloping sides, concave upper surface and antero-posteriorly directed long diameter, the advance of the head results in its antero-posterior diameters being promptly forced into coincidence with the antero-posterior diameter of the pelvic floor, to accomplish which the occiput swings through an arc of forty-five degrees from left to right from the left ilio-pectineal eminence and comes to lie under the symphysis pubis. Now, in R. O. P., were the same factors, and none other, at play, with advance of the head, the occiput should swing through an arc of forty-five degrees, from right to left, from the right sacro-iliac synchondrosis and come to lie in the hollow of the sacrum. Clinically, we know that such a rotation is noted infrequently, certainly not more often than once in twenty-five cases, and that usually, when labor does not become arrested, the occiput swings through an arc of one hundred and thirty-five degrees from right to left and comes to lie under the symphysis. In order to intelligently interfere with labor in cases in which rotation fails to occur, it is very important that we should understand the factors responsible for its normal production. To do this, it is necessary to consider the shape of the birth canal. The axis of its upper portion, if extended beyond the woman's body, would pass through the region of the umbilicus above and anteriorly, and through the lower part of the sacrum below and posteriorly; the axis of its lower portion, with the perineal gutter formed and the vulval ring displaced, with the woman on her back, from a vertical to almost a horizontal position, would pass through the center of the vulva in front of the symphysis above and anteriorly, and through the mid-portion of the sacrum below and posteriorly; the two axes forming approximately a right angle with each other in the lower central portion of the pelvis. It follows from this that were one to place a rigid steel cylinder of the shape and size of the fetus in the upper portion of the birth canal, its birth could only be accomplished by tearing out the posterior wall of the lower portion as far up as the lower part of the sacrum, and, therefore, that the ability of the fetus to bend, especially at the joint between its two major portions, the head and the trunk, is an essential contribution on its part to the successful accomplishment of labor. We know, of course, that in the course of its descent through the upper birth canal, with the proper equilibrium between the forces of expulsion

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and resistance, the head becomes progressively flexed because the greater amount of force is brought to bear on the longer, anterior, sincipital arm of the head lever, until flexion is completed and arrested by the contact of the chin with the sternum. In L. O. A., when the head reaches the pelvic floor its progress is unarrested because it can now very readily extend on the trunk to take the right angled curve of the birth canal, with the result that anterior rotation of the occiput easily occurs for the reasons previously stated, bringing the head into the most favorable relationship to the canal. In R. O. P., on the other hand, while flexion occurs as readily as in L. O. A., when the head, in flexion, encounters the pelvic floor, an *impasse* develops because, at the same time, the right angled curve of the canal is also encountered; in order to progress, the head must bend on the trunk to take the curve, and, with the occiput to the rear, this can only take place by flexion which is already complete. There now occurs the extraordinary movement of internal rotation of the occiput anteriorly, through an arc of one hundred and thirty-five degrees, from right to left, from the sacro-iliac synchondrosis to the symphysis. This requires a rotation of the head on a vertical axis through its articulation with the spine sufficient to make the face look obliquely backward over one shoulder, and, while it has been shown that this degree of torsion in the fetus does not ordinarily damage the spine or cord, it is certain that, in some cases at least, the degree of torsion necessary is reduced by a corresponding rotation of the shoulders from the left to the right oblique. As a result of this movement, the head is brought into the same relation with the birth canal as though the occiput had originally been directed anteriorly and progress now goes forward because of the ability of the fetus to bend or break, to take the curve in the birth canal by extension of the head on the trunk. It is altogether probable that the causation of this extreme rotation is still imperfectly understood. In the opinion of the writer the most satisfactory explanation is, by all odds, that of Selheim. This authority has shown that in forcing a cylindrical body, capable of being bent in differing degrees in different directions, through a curved cylindrical canal, sufficient expulsive force develops a spinning movement in the contained body which causes it to rotate into such a relation with the containing cylinder as to permit it take the curve by bending in the direction of which it is maximumly capable. What occurs in an actual R. O. P. labor, then, granted adequate forces of expulsion and adequate but not excessive forces of resistance, is the development of a tangential force which serves to spin or rotate the head around its vertical axis (in some cases the whole fetus) so that the occiput is brought to the symphysis, and the ability of the head to bend on the trunk is brought into accurate coincidence with the shape of the canal.

In a small proportion of cases, 3 to 4 per cent, the occiput swings posteriorly into the hollow of the sacrum. This mechanism is more likely to be seen in any case where there is a diminution in the usual amount of resistance, a condition which may be contributed to by a small fetus, a justo-major pelvis, or any relaxed state of the pelvic floor, as from multiparity, birth of the first twin, or from the effects of hyosin-morphine, ethylene or low spinal anaesthesia. All of these conditions conduce to imperfect flexion through failure of resistance with the result that, on reaching the pelvic floor and the curve in the birth canal, progress in taking the curve is initiated by flexion of the head, whereupon the mechanism seen in an anterior vertex occurs and the long diameters of the head are merely forced into relation with the long diameter of the gutter of the pelvic floor and the occiput swings posteriorly from right to left into the sacral hollow. Even under these unfavorable circumstances, nature usually shows herself mistress of the situation and effects delivery. The head undergoes an exaggerated flexion and the brow becomes stemmed against the symphysis. The chest is now wedged down into the pelvis above the head which becomes markedly moulded by lengthening its occipito-mental diameter and, all too frequently, the acuteness of the angle in the birth canal is considerably diminished by the simple expedient of tearing out its posterior wall in the lower portion. The occiput ultimately escapes over the posterior commissure of the vulva or over the posterior margin of the resulting laceration, and, the face slipping down from under the symphysis, the birth of the head is completed.

Clinical Course

It is, of course, perfectly true that even in

primiparae, in many cases of R. O. P., or the much less frequent L. O. P., the course of labor is uneventfully toward a rapid and spontaneous termination. On the other hand, there can be no question that such labors are much less frequently observed in these cases than in the anterior varieties of the vertex, and anyone practicing obstetrics soon learns to recognize a clinical syndrome which definitely indicates a posterior occiput even before careful examination of the patient confirms the diagnosis. The clinical course in these cases is somewhat as follows: Premature rupture of the membranes before or early in the first stage is much more frequently observed. The labor gets under way slowly and hesitatingly. The pains are infrequent, with no definite periodicity, quite variable in intensity and of short duration. This primary inertia is variable in degree, usually changes toward a more normal type, and the pains gradually become harder, longer and more frequent. All too frequently, however, the inertia persists throughout the labor, or, after a longer or shorter period of quite normal labor, a secondary inertia develops, and this may occur in either the first or second stage. The morale of the patient is sorely taxed under these trying circumstances and, if not very firmly and tactfully handled, she may become hysterical and quite unmanageable. This frame of mind is very contagious, not only for her family, but, it is to be feared, for her physician, a point of great practical importance, and one which has been responsible for much ill-advised and untimely intervention. If this course of events is too prolonged, or, if proper measures are not instituted to insure rest, nutrition and fluid intake, the trend, as far as the general condition of the patient is concerned, is toward exhaustion, with acceleration of the pulse rate and, not infrequently, low grade fever. Fever is more likely to be noted in cases with prolonged rupture of the membranes, and probably is usually due to an infection in the amniotic sac rather than exhaustion alone, particularly since the uterine discharges in such cases are usually of a very foul odor.

As a rule the condition of the fetus need give little concern, no matter how the labor drags, as long as the membranes are unruptured, but with rupture the outlook, while usually good, is less favorable and intrauterine death may occur from asphyxia, intracranial hemorrhage or infection, in which latter connection should be noted the not infrequent occurrence of neo-natal death from broncho-pneumonia.

Dilatation of the cervix proceeds with extreme slowness but, in the great majority of cases, does finally become complete. The view expressed by Williams that the tardy dilatation is the result of the inertia rather than the cause is, I believe, sound in most cases. Examination early in labor often discloses a relation of the cervix to the head not so frequently seen except in a posterior occiput. The head is deeply engaged in the pelvis. The internal os is dilated and the cervical canal is taken up and incorporated in the lower uterine segment which fits as tightly over the head as a skull cap. The external os is undilated and very small; the membranes may be unruptured but there is no forewater. In my experience the outlook for a prolonged cervical stage is just as likely, if not more so, in these cases as in those in which the head is unengaged with the bi-parietal diameter caught in the sacro-cotyloid. So small is the external os in this condition and so tight the fit of the lower segment over the head that one may readily fall into the error of diagnosing complete cervical dilatation, a very serious one if the decision to intervene is based on it. I was once asked to see, in consultation, an ear presentation; but the external auditory meatus, the supposed presence of which in the center of the pelvis had caused the diagnosis to be made, turned out to be the undilated external os in just such a case.

The completion of dilatation and retraction of the cervix over the head not infrequently marks the turning point in a prolonged and trying situation. With the onset of voluntary expulsive efforts the pains steady as to frequency, duration and intensity and progress may be promptly evidenced. On the other hand, all too often this favorable change is either not noted and the primary inertia of the first stage is continued into the second, or, after a brief accentuation, the condition reverts into a secondary inertia as bad or worse than the primary. There can be no question that the rotation of the occiput requires more force and a longer time for its accomplishment in posterior than in anterior cases. Because of the exhausted state of many patients at the beginning of the second stage, we are

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therefore faced by a situation requiring more than the usual effort from a patient who, very frequently, has less than the usual physical reserve on which to draw. Under such circumstances, we naturally more often encounter arrest of the labor. This may occur at any point. With patience, its occurrence in the first stage is, fortunately, quite rare and the vast majority of patients will finally obtain complete cervical dilatation. In the second stage, arrest may take place with the occiput still obliquely posterior, after its rotation posteriorly into the hollow of the sacrum or at any stage of anterior rotation. Not infrequently rotation is much delayed and may occur very late in the second stage even when the head is distending the vulva.

Management

In discussing the management of occiput posterior cases, certain general considerations will be mentioned before taking up specific procedures aiming at delivery. It must be borne in mind that we are considering the uncomplicated case, as marked disproportion or some associated maternal or fetal condition may so dominate the picture as to point definitely toward early and radical intervention.

In the first place, the psychology of the patient merits attention. As the first stage drags on and on, the woman soon realizes that there is something wrong and, unless the situation is tactfully explained to her, panic ensues and a vicious circle is quickly established. My practice is not to talk over the prognosis with the patient in advance—she may be one of the fortunate in whom labor will proceed quickly and normally—but as soon as the labor demonstrates itself to be slow and dragging and questions are asked, I attempt to explain just what is likely to occur. The almost uniformly successful outcome of such cases is accentuated, but the time element involved is quite frankly explained. It is a fatal mistake to hold out hope of a speedy conclusion; when the course of events shows this to be false, the patient loses confidence in the physician and this is regained with difficulty or not at all. Much serious trouble may be forestalled by a frank talk with the family, the difficulties and dangers involved being explained and the point made that the labor is to be managed for the best interest of the mother.

In the worst cases, when the first stage may run on for forty-eight or even seventy-two hours or more, the general condition of the patient needs careful watching. The question of rest is of paramount importance and morphine gives it most ideally. The size and weight of the woman considered, the dose should be large—enough to stop the labor and insure several hours of sound sleep. The bladder and bowels should be kept empty, the catheter and enemata being used if necessary. Nourishing food in small quantities and at frequent intervals is indicated unless nausea and vomiting are complications. Of even more importance than food, however, is keeping up the fluid intake and thus preventing the partial dehydration from which many of these women suffer. The course of labor should be followed by abdominal and rectal examination only and in most cases vaginal examination may be dispensed with entirely unless intervention is deemed necessary: an increased safety of the patient and a very pleasant sense of security of the physician will result from this course. Acceleration of the pulse rate and fever are signs of serious import and may add a sound objective basis to the patient's pleadings for relief to which, otherwise, a deaf ear must be turned as far as premature intervention is concerned.

Underlying the whole broad subject of intervention in this, or any other type of labor, there are certain general principles involved which, considering the radical trend of much recent obstetrical teaching, cannot be too often iterated. We may all of us profitably bear in mind that if the great majority of labors were not headed toward a spontaneous completion, the race would have long since come to an end; if the women of past ages had been as much in need of his services as the radical obstetrician would lead us now to believe, this bright adornment of modern civilization would have been left slumbering in the ovary of time. Intervention, then, should always be predicated on real, and not imaginary, necessity—certainly never on the convenience of the physician. Furthermore, all intervention increases the risk of infection, and this is true no matter how perfect the aseptic technique or how apparently trivial the procedure—even vaginal examination, for example. The physician is not to be held accountable for the nature of the ordeal of labor—he did not invent it—and his legitimate function with respect to it is to aim at the birth of a healthy baby without undue

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traumatism, permanent damage or loss of reproductive capacity for the mother, and with as much relief of pain as is consistent with the safety of each. When he attempts to recast the whole process along lines which he conceives to be an improvement on nature, his patient all too frequently comes to grief, a fate which he himself merits, but, due to the ignorance of the laity, unfortunately usually escapes. The question of the relative importance of the lives of the mother and baby is also in need, or so it seems to me, of some general clarification of view. In this day and generation we may thank God that the actual destruction of the live baby almost never presents itself as a possible solution, no matter how great the difficulty. And yet there can be no question that the mother's life and reproductive health are the more important from no matter what point of view considered. Certainly our instructions from the husband, who employs us, are always to "save the mother." In this connection, I would lay down the principle that intervention in the supposed interest of the child which subjects the mother to any material increase of her own risk is unsound obstetrics, poor morality, bad ethics and anti-social in its tendencies. I do not wish to be misunderstood; I am not speaking now of destructive operations on the fetus, but merely of making it assume its share of the risks involved in these difficult situations. Furthermore, the attempt to rescue the fetus from a perilous situation through a birth canal which is as yet unprepared for its passage is as a rule, fraught with more danger to it than are the forces of labor to which it is exposed, and, therefore merely subjects the mother to additional risk with no compensating advantage to the baby. The result of this loose and specious method of thought is best shown, however, in the increasing number of Caesarean sections now being done for such indications. More will be said on this point later on.

Some wit was once asked for what the colloquial name of a certain railroad, the D. L. and W., stood, to which he replied: "Delay, Linger and Wait." This jest may well be taken as the summary of our correct policy toward the posterior occiput case. In most cases its intelligent application results in a successful and spontaneous labor. Intervention in the first stage is rarely indicated. It usually drags its weary way on to complete cervical dilatation. In a few cases, with the head high, and the cervix one-half to two-thirds dilated and progress at a standstill, combined manual rotation of the head internally and the anterior shoulder externally will successfully convert the R. O. P. to an L. O. A.; if the body is turned, the new and much more favorable presentation will usually persist and the subsequent delivery may be left to the natural forces. I do not advocate the use of bags to hasten dilatation. They increase the risk of infection, render a subsequent Caesarean section much more dangerous, and tend to displace the presenting part, with the attending dangers of prolapse of the cord or conversion into a still more unfavorable presentation. Very occasionally the condition of the mother will indicate delivery with the first stage still uncompleted. Under these circumstances the resistance of the cervix should in every case be overcome before applying forceps. Unless the cervix yields to manual dilatation with the greatest ease, this is best accomplished by incision in the mid-line anteriorly and posteriorly, or, with more dilatation, by Duhrssen's multiple incisions. It cannot be too much emphasized that intervention with incomplete dilatation is a serious procedure, only to be undertaken on the most definite and urgent indications.

The first stage completed, indications for intervention should be much more liberally interpreted. Evidence of foetal distress—changes in the rate, quality and rhythm of the heart sounds, excessive activity and the passage of meconium—points to the termination of labor. On the part of the mother, exhaustion, fever and an acceleration of the pulse rate, prolongation of the inertia of the first stage, secondary inertia, failure to make progress after a reasonable time or, and very important, a tendency toward tetanic uterine contraction, indicate intervention. This may be required with the labor in any stage of completion. The occiput may still be obliquely posterior, rotated into the hollow of the sacrum, or in any degree of anterior rotation, and the station may be anywhere from the pelvic brim to the perineum. The greater the progress the easier and safer the delivery and the better the prognosis for both mother and child. If the diagnosis of foetal death can be firmly established, no esthetic consideration should be allowed to interfere with craniotomy when this seems to

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offer the mother the easiest delivery. With the head above the brim, version and extraction should be first considered. With engagement, with the occiput still obliquely posterior, the first question is regarding the means of rotation anteriorly. We have three courses, rotation manually, with ordinary forceps, the Scanzoni operation; or with the Kieland forceps. With the latter I have had no experience. Its advocates claim that it accomplishes rotation readily, without undue traumatism, and with the undoubted advantage that the head can be delivered without reapplication of the blades. In the Scanzoni operation, after rotation, the forceps must be removed and reapplied to make the pelvic curve, which is reversed by the rotation, coincide with the curve of the birth canal. I have done this operation many times; I always dread it and fear serious laceration of the levator muscles and fascia under the bladder. Manual rotation in my hands has proven safer and less traumatizing and is usually fairly readily accomplished if the anterior shoulder be turned with the other hand or by an assistant at the same time. Indeed, failing in the attempt at manual rotation, rather than do a Scanzoni, I now prefer to rotate into the hollow of the sacrum and deliver with the occiput to the rear. With a deep episiotomy and flexion of the head to bring the bregma under the symphysis, this is accomplished usually with surprisingly little difficulty and without undue trauma. Following successful anterior rotation, the forceps delivery is simple.

I am firmly convinced that in the handling of any obstetrical situation sound judgment with respect to the necessity for and time of intervention is as much if not more of an asset than expert operative skill, desirable as that is. Nowhere, I believe is this dictum truer than with regard to the question of Caesarean section in the type of case under discussion. In uncomplicated posterior occiput cases, by dividing the primiparous patients into three age groups of those below, say, thirty-two or three, between this and thirty-seven or eight, and above this age, the problem of Caesarean sections may be summed up by borrowing legal terminology. In the case of laparotomy in the first group, the burden of proof as to the justifiability of the procedure is certainly on the operator; in the second group it is still on the operator, but in a lessened degree; in the third group it should certainly be shifted from the operator to his critic. Without any statistical evidence to support it, I strongly suspect that the alarming increase in the number of Caesareans performed in this country is largely due to the employment of the operation in this class of cases. I recently saw a young woman with a normal pelvis and small six-weeks' old baby who had been Caesareanized in New York City after six hours of labor, the only explanation vouchsafed her being that she was not making progress very rapidly. This unfortunate girl may be taken as a typical example of a group of individuals who are becoming a more and more frequently observed obstetrical problem. With twenty years or more of childbearing before her, she faces a serious menace to her life every time she becomes pregnant. If properly advised as to the risk involved, she and her husband will probably elect sterilization for her following the next Caesarean, and the dictum, once a Caesarean, always a Caesarean, would seem to have a formidable array of expert opinion back of it. Having successfully passed the additional hazard to her life which the operation placed on her immediately, she faces now a risk of rupture of the uterus in a subsequent pregnancy or labor, and all the dangers of intra-peritoneal adhesions, intestinal obstruction, hernia through the scar, etc.—all of this because of what was undoubtedly a totally unnecessary and ill-advised operation. But this is not the time for a discussion of the dangers of Caesarean section: they are grave enough and manifold enough to make it imperative that it should never be employed except on very positive indications. In posterior occiput cases its employment is ordinarily a grave error in obstetrical judgment.

We have seen that, judged by our results, obstetrics in Washington is sadly in need of improvement. This paper may be interpreted as an earnest plea for more conservatism in handling a group of cases which always taxes our resources of sound judgment and adequate skill. It is felt that adherence to a conservative policy will contribute not unappreciably to an improvement in our results. The local maternal mortality rate would seem to be a subject concerning which this Society, in the interest of the good name of the profession, might well interest itself more keenly. But there are higher and more compelling reasons

for such an interest—reasons never to be better stated than in the words of the great poet, Oliver Wendell Holmes, who in 1843, in an essay on "The Contagiousness of Puerperal Fever," wrote:

"I have no wish to express any harsh feeling with regard to the painful subject which has come before us. If there are any so far excited by the story of these dreadful events that they ask for some word of indignant remonstrance to show that science does not turn the hearts of its followers into ice or stone, let me remind them that such words have been uttered by those who speak with an authority I could not claim. It is as a lesson rather than as a reproach that I call up the memory of these irreparable errors and wrongs. No tongue can tell the heart-breaking calamity they have caused; they have closed the eyes just opened upon a new world of love and happiness; they have bowed the strength of manhood into the dust; they have cast the helplessness of infancy into the stranger's arms, or bequeathed it, with less cruelty, the death of its dying parent. There is no tone deep enough for regret, and no voice loud enough for warning. The woman about to become a mother, or with her new-born infant upon her bosom, should be the object of trembling care and sympathy wherever she bears her tender burden or stretches her aching limbs. The very outcast of the streets has pity upon her sister in degradation, when the seal of promised maternity is impressed upon her. The remorseless vengeance of the law, brought down upon its victim by a machinery as sure as destiny, is arrested in its fall at a word which reveals her transient claim for mercy. The solemn prayer of the liturgy singles out her sorrows from the multiplied trials of life, to plead for her in the hour of peril. God forbid that any member of the profession to which she trusts her life, doubly precious at that eventful period, should hazard it negligently, unadvisedly, or selfishly!"

1801 *Eye Street, Northwest.*

USE OF THE OPHTHALMOSCOPE BY THE GENERAL PRACTITIONER.*

By CLIFTON M. MILLER, M. D., F. A. C. S., Richmond, Va.

When von Helmholtz first discovered and used an ophthalmoscope a new epoch was made not only in ophthalmology but in general medical diagnosis.

The fundus of the eye, containing the nerve fibres of the retina as well as the blood-vessels of the retina and choroid, is a fruitful source of study of disease changes. Sometimes the first manifestation of serious systemic disease is some interference with visual acuity, and a study of the fundus oculi leads to such other examinations as to make certain a diagnosis of serious pathology of some remote organ. There is scarcely a pathologic condition occurring in the deeper structures of the human eye that is not the result of some general systemic condition.

Realizing the truth of the foregoing statements, it has seemed to me that the ophthalmoscope as an aid to general medical diagnosis is an instrument of the greatest importance. The use of this instrument has been looked upon by those not skilled with it as something too technical for them to learn, and a doubt has existed in their minds as whether the results obtained in using it would justify the time spent in learning its use. Its use is as readily learned as that of most other instruments of precision, and while one may not become exceedingly skilled with it, if using it only occasionally, it gives him yet another point of approach in his methods of diagnosis. Here, as elsewhere, a full appreciation of what is normal should be had before one can come to the conclusion that a departure from the normal is present.

Human eyes are plentiful, and, while the fundus cannot always be studied satisfactorily without dilating the pupil, it frequently can be done, and the medical man who constantly has his ophthalmoscope on his desk can look into the eyes of a great number of patients in the course of a few days and will soon get the hang of the instrument and know what is the normal appearance of the fundus. It may take some time to learn just how much of a departure from an absolute normal is to be passed by before pathologic conditions are to be thought of, but this, too, will come with the study of a volume of cases, and it is a study fraught with interest at all times.

A blurring of the outline of the nerve head, particularly on the nasal side, does not necessarily indicate optic neuritis or intracranial pressure; it may be only an indication of eye strain from an uncorrected or improperly cor-

*Read before the Stuart Circle Hospital Clinical Club, March 13, 1929.

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rected error of refraction. But a rapid increase of this blurring found on examination a few days later may indicate serious disease of some sort which may require all of our diagnostic acuteness to discover and put us on our mettle to properly treat. It is not infrequently the case that the first indication of a serious systemic condition is discovered by noting changes in the fundus ŏculi as a result of frequent ophthalmoscopic examinations at short intervals.

So many systemic diseases have intra-ocular manifestations that it is almost impossible to mention them. Increased intracranial pressure, frequently indicated by changes of the optic nerve, is most usually thought of, but is not the most important, for it is not unusual that, by the time we have optic nerve changes, the other symptoms are such that the opthalmoscopic findings are only confirmatory. On the other hand, it sometimes occurs fairly early, and the time of its occurrence in the train of symptoms may be an aid in diagnosis of the character and location of the trouble. All the symptoms we can supply ourselves with are not too many when we want to make an accurate diagnosis.

Syphilis in its occular manifestations is manifold. Not only is the anterior half of the globe often attacked, but the ophthalmoscope reveals its ravages in the retina, choroid and optic nerve. While, from a diagnostic standpoint, these changes may not be so important as they were in the days prior to the use of serological tests, they may be sometimes of great service. Serological tests are not infallible, and by the piling up of clinical symptoms, we may be enabled to make a positive diagnosis in spite of negative serologic findings, and the ophthalmoscope frequently shows at least one important clinical picture.

Diabetes mellitus and chronic nephritis are frequently responsible for marked changes in the retina. In some cases, these changes are so characteristic that a diagnosis of nephritis can be made without further examination, though other examinations should, of course, be made. The changes due to diabetes are rarely so characteristic. Most frequently the changes present are such that one can only say they are either diabetic or nephritic, and leave the differentiation to the further systemic examination.

Just a few days ago a man of forty presented himself to me on account of lowered vision in his right eye. He was a hearty man whose work was largely out-of-doors and he was not aware of any trouble except the interference with vision. Ophthalmoscopic examination showed changes in the right fundus which were due either to nephritis or diabetes mellitus, and further examination at the hands of his physician showed a chronic nephritis. This man's father and brother died of chronic nephritis. If eye changes had not occurred, he would have probably gone for a year or more before seeking counsel. His physician gives a good prognosis in regard to his hope of longevity; this probably would have been less good if he had been delayed six months in going under treatment. The prognosis in regard to his eye is not so good. There have been some of these cases where marked improvement in vision took place under a proper systemic regimen, but it cannot be looked for.

Albuminuric retinitis of pregnancy usually recovers full vision. The study of the optic fundus in arteriosclerosis and high blood pressure from any cause presents many interesting pictures and gives a better understanding of the condition with which we are dealing.

A certain picture seen in the fundus will enable us to state as a fact, though we will find there are rather frequent exceptions, that somewhere in the direct ancestry of that person, usually a man, there had been a union between two close relatives, probably first cousins. This is the condition known as retinitis pigmentosa, and its most annoying subjective symptom is night blindness. It is an inherited condition and may be retained in a family for generations, usually being present in the males in the proportion of about two and a half to one.

No attempt has been made to acquaint you with all the conditions of the fundus oculi that may be revealed by the use of the ophthalmoscope. Only a few outstanding points have been touched upon in an endeavor to arouse your interest in its use as an addition to your diagnostic armamentarium. The more you use it, the greater will become your skill in its use and the better you will be pleased with it. It is an instrument worthy of a place alongside the sphygmomanometer for everyday and constant use.

Stuart Circle Hospital.

SOPHISM IN DERMATOLOGY.*

By WALTER JAMES HIGHMAN, M. D., New York, N. Y.

It is a curious reflection on physicians that diseases of the skin constitute a specialty. The surface of the body, it must be conceded, is not hard to see, nor is it beyond average perception to detect when it is abnormal. It requires only two of the five special senses. Moreover, the skin is visible before death. It can be regarded without preliminary dissolution or surgical mediation as is required for the viscera. There is something final about removing a heart or kidney or spleen in order to become acquainted with its morbid changes. The clinical study of skin lesions is a branch of gross pathology the approach to which is without vital menace to the patient and without effort to the observer. But the ordinary practitioner knows nothing much about the skin—for one reason, because it has the unromantic quality of nearness. It is a field not remote enough to seem unduly green. No fences need be hurdled, no eminences scaled, no streams forded to get to it. It is next door, not Eldorado.

Astonishing, apparently, that this should be, considering the universal cry for autopsies; the belief that medical knowledge depends on study of diseased tissue. The diseased skin being within the reach of all studiously minded, why this intellectual paradox? It is partly due to disregard of what it obvious, or every physician would be a good clinical dermatologist; and partly due to an external circumstance, or every physician could be a good clinical dermatologist.

This external circumstance is the language of dermatology, a horrendous tongue calculated to halt the hardy and alarm the timid or inert. It was a classic habit to describe dermatoses in terms of a Latin and Greek medical vulgate few people have cared to master. The manner of dermatologic speech dominated the matter to which it applied. A dermatologist fixed himself in the annals of his kind by means of his surname in the Latin genitive case. This is how. There is an eruption which in English might be pictured as variously shaped, swollen red spots. It was first described by Hebra as erythema multiforme exudativum, and qualified, in honor of the author, by adding his Latinized name in parentheses—Hebrae. Of about five or six hundred named cutaneous syndromes, dermatoses, or what not, probably over a third are baptized according to this tradition. Here is another type of label, érythrodermie pityriasique en plaques disseminées (Brocq). Would one expect this to be identical with xanthoerythroderma perstans (Crocker)? Could anyone imagine that these are synonymous with parapsoriasis en plaques? Or that parapsoriasis is possibly identical with a condition called parakeratosis variegata? Could the disease, indeed, be visualized from the description as small or large, yellowish-red to buff, superficially scaling, uninfiltrated spots? Or even realizing this, is any clue given as to the nature of the disease?

Thus mastering clinical dermatology involves learning a jargon which in itself bears no relation to the essentials of morbid skin. It implies no understanding of the cause or nature of skin diseases. It furnishes no key to their pathogenesis. It is as purely descriptive as the botanist's or entomologist's terms. What dermatology needed was a Darwin, a Huxley, and a Romanes to coordinate scattered data into the form of an intellectual synthesis, a reasonable and reasoned branch of science. The moment of this attempt finally dawned, and then and thereafter the dusk of dermatology suffered some dissipation, but before this moment arrived a sort of false dawn appeared of which the very terminology that is being discussed was a sign. This requires an explanatory word.

British physicans have a clinical sixth sense. Harvey, John Hunter, Brodie, Bright, Stokes, Burdock and Osler illustrate what is meant. With objectivity amounting to genius they distil from bedside experience scientific essentials as valuable as anything that can be derived from set laboratory problems. A little over a century ago, Willan, a dermatologist endowed with this native clinical acumen, brought to bear on his specialty a system of reasoning which, had it been followed out, would have altered the history of cutaneous medicine. There would have been no such separation of dermatology from general medicine as did occur. He sought the general medical factors he believed inherent in skin diseases. His untimely death left the task to Bateman, his most inspired pupil. There the line ended in England until the final quarter of the last century. Willan would probably have been able to purge dermatology

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of much of its fanciful past, but matters took a different course. From 1840 to 1890, in France, Germany and Austria, the specialty fell under the guidance of a group of descriptive observers with keen eyes for details. This led to the differentiation and naming of several hundred skin diseases. Cazenave, Dévergie, Hardy, Hebra, Kaposi, Neumann, and later, Unna, Darier, Brocq, Ehrmann, Wilson, Jadassohn, Neisser, are among the great descriptive dermatologists, the second group linking the last century with this. Nor have the names been exhausted. In England we might have added Crocker and the two Foxes; in America, James C. White, Bowen, Duhring, Stellwagon, Zeissler and Lustgarten.

The over-elaboration inherent in this stage of dermatologic evolution served a great purpose. It identified and objectively classified practically all the cutaneous syndromes known today. Therein lay both the virtue and vice of dermatology. The virtue is a positive one. The vocabulary and material of clinical cutaneous medicine are established. The point of departure from which must start scientific growth of the subject is set. No dermatologist merits the title who has not mastered these essentials. They are its rhetoric and grammar. They are the foundation of dermatology. The vice is that descriptive dermatology in no wise tends to penetrate the nature and cause of skin diseases. It is far easier to name symptom complexes than it is to study what occasions them; than to isolate the bonds uniting what appears divergent, or separating what appears related, for objective features provide no clue to origins, to the actual interrelation among skin manifestations, or, of these in turn, with internal derangements, diseases or disturbances. Thus, dermatologists resemble to the outsider a priesthood mumbling a disjointed litany at the foot of a vague shrine. To give a group of signs and symptoms a convenient identification is but tentative progress. It approaches no reality. It explains nothing. It establishes no scientific hold on etiology, the discovery of which furnishes the only avenue of approach to intelligent treatment, actual or preventive.

To this very day a conclave of dermatologists is eloquent only to the extent a case is debatable, if of its nature little or nothing is known. Be the case exhaustively analyzed, all relevant data elicited, its cause and character ascertained, incorrigible dermatologists are inarticulate. More than this, they appear chagrined, as though a rostrum had been spirited away from under their oracular feet. Thus the foundation of dermatology becomes its first great sophism in two ways; on the part of the dermatologist through translating what should be no more than elementary to him into something more momentous than it can possibly be; on the part of the general practitioner in fostering within his own mind the belief that the subject is detached, verbose and flippant. Both are reasoning falsely. Dermatologists are converted into Pharisees, general physicians into jibing mockers ignoring the one organ they could with greatest ease know something about. Both, therefore, are equally culpable in sustaining a false note in medicine, in creating an intellectual dissonance. But an almost impalpable tendency asserted itself in the final quarter of the last century. Unna, Neisser, and later Ehrmann, Jadassohn and Lustgarten, were not only descriptive dermatolgists, but began to appraise skin diseases according to new standards. Long before, the idea of diathesis had occupied French and English students, a sort of bastard heritage of humoral pathology, a latter day classicism. What little merit this philosophic error possessed lay in its stimulating reflection on the possible dependence of skin upon internal disturbances. This became rational, or rather entirely metamorphosed, as knowledge of morbid biology with gathering momentum carried along medicine in all its aspects. Almost at the same time Pasteur's and Virchow's work bore fruit. The proof of the parasitic nature of infection, and of the morbid changes of tissue in terms of cell pathology, revolutionized all conceptions of disease. Later, the discoveries of Ehrlich, Metchnikoff and Wright in relation to immunity, and Richet's disclosures as to anaphylaxis, gave medicine its present stamp.

Nor could dermatology withstand this intellectual onslaught, however doughtily the retiring invincibles continued to fight reason with language. Today there are still rear guard actions, for this was a tenacious soldiery, and the end is not yet. But replacements have been made from a different, a newer draft, bringing with them a fresh vigor, but one which unhappily harbors other seeds intellectually ominous.

Throughout the world there are scores of dermatalogists who are in effect as enlightened as physicians can be, and many more scores who mouth the new enlightenment little understanding its significance. Side by side with these are those echoing the older order of things, who still, whatever the explanation for the anachronism, regard dermatology as a linguistic feat. These will not be discussed. Their days are numbered and shortly they will in the nature of things become impalpable shadows. In passing it may be mourned of these, as of Lycidas:

"They shall not welter to the parching wind
Without the mead of some melodious tear."

This tear is appreciative rather than melodious, and shed for lifeless forms that grew as great as they could, but not as great as they should have. They served well, but could not expand. Dermatology outstripped them, but so far as they could follow they followed; and what they knew everyone today must also know if he would be a dermatologist. There is nothing ludicrous in this except when people who should be wiser still regard descriptive dermatology as more than the groundwork of dermatology; and when other physicians not conversant with modern dermatology still think of it in archaic terms, giving testimony only to their own illiteracy in so doing. And this group constitutes the majority of contemporary non-dermatologists.

Modern dermatology and modern dermatologists are of what this paper treats. It rapidly became obvious that the skin was not an organ independent of other bodily influences. In America particularly this view asserted itself early, then in Edinburgh, and finally on the Continent where the ancient regime was most firmly intrenched. When it did reach the Continent the idea was more scientifically pursued, but with less bedside practicality. Continental physicians have always been patronizing toward the Americans, a reaction doing them little enough credit and nurtured by an insular conceit not warranted by conditions. As regards the every day application of medical knowledge at the bedside, in hospitals and in surgery, Continental medicine is archaic compared with American. In its purely scientific aspects, however, American medicine compared with European medicine may still be relatively ingenuous, but the gap is closing. This is also true of American dermatology. The Europeans have no talent for therapeutic nicety worth mentioning in the same breath with our's, although in theory it is possible we must still defer to them. And nevertheless it was from America that the first real challenge issued against descriptive dermatology as such.

The earliest attempts in this direction were purely as to treatment. The effect of arsenic in some dermatoses, notably lichen planus and psoriasis, had long been known. But its wide and purposeless administration in nearly all eruptions was an absurdity that constitutes a historic sophism, and indicates the mental slant that determines this sort of intellectual error. It is this habit of mind which leads to many inaccuracies of thought, and which leads to irrelevant conclusions not only in diagnosis but in treatment. Nor are only dermatologists reprehensible. Internists treating skin diseases, although they may know nothing about them, prescribe arsenic even less advisedly. These are not only sophists, but, so far as skin diseases go, ignoramuses as well. It will be noted that sophism in dermatology never applies alone to the specialists, but always in a parallel or supplementary way, also to physicians at large.

Together with arsenic as the favorite medicament, vague dietetic and intestinal regimes were outlined. Some dermatoses were regarded as rheumatic in nature. In England psoriasis, together with every other unexplained disease, was looked upon as gouty, and colchicum flowed. Fresh air, rest, repose of mind, were emphasized as therapeutically important, and who will deny them as much importance in disease as in health? To dwell upon them though is even more amusing than it is trite, for what penetration is there in admitting that life is sustained by proper food, clothing, rest, shelter, and fresh air? Psoriasis and eczema are found in athletes, acne in the young who are living vigorously. Has any one seen these conditions affected *pro* or *con* by applying the principles mentioned above? Yet this sort of thing, although it indicates an effort to regard dermatoses from an internist viewpoint, was what went on until more complex hypotheses crept into clinical medicine, and into dermatology. Was this sophistry so much as groping in the dark? Were dermatologists any more culpable than internists? Not at all!

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With growth of medical knowledge disease began to be reviewed in terms of metabolic and ductless gland disturbances, and in relation to infection, and allergy. Treatment was modified by what was discovered, or by fancied truths determined in these fields. In addition, physiotherapy in various forms asserted itself. Dermatology too felt the effect of these movements. Much that is good, and a great deal that is nonsensical, issued from all of this. The good inheres in the actual value of all knowledge, and in the measure to which knowledge is used with understanding. The nonsense is due to its misapplication by minds incapable, through individual limitations or inadequate training, of possibly grasping anything. This, in turn, is the result of improper medical and specialistic education, a broad subject that can be no more than mentioned in this paper, and which merits serious reflection. Suffice it to state that the present tendency of medical education to emphasize artisanship rather than art and science is a fundamental cultural error for which society will pay dearly in more ways than one, but chiefly because cleverness rather than soundness will determine success in practice. The scientifically inclined will be driven out of medicine, because neither medical schools nor the public are discriminating enough to distinguish between mind and matter.

Metabolic disturbances, as demonstrable by nitrogen, sugar and like determinations were held accountable for numerous skin diseases. Psoriasis is an outstanding example. In England it had long been regarded as gouty in origin. Bulkley in New York, forbade his patients all nitrogenous food. Schamberg demonstrated by laboratory methods a remarkable disturbance of nitrogen metabolism. The details need not be elaborated. Had there been any fundamental significance to any of this, psoriasis should disappear with regulation of the underlying cause, without local treatment. It does not so disappear. Nevertheless, psoriatics are treated as if the delusions recorded were fact, the dereliction being even commoner among internists than dermatologists. So far as the consistent effect of anything medical on psoriasis is concerned, its mysterious and capricious disappearance and appearance might as well be considered an act of God. Eczema is explained in a dozen different ways, among others as a nitrogen disturbance by some, a carbohydrate disturbance by others. Laboratory evidence supporting any personal bias exists. Its disappearance under thus indicated forms of treatment is yet to be reported. Since the studies in question were sincerely conducted, it remains to find the error in reasoning made by the investigators. Undoubtedly psoriasis and eczema exist in people with raised blood nitrogen or sugar. But this is not cause and effect. It would be just as reasonable on the evidence at hand to try to reduce the blood nitrogen by curing the psoriasis or eczema as to attempt the reverse, as is done. The first is more frankly ludicrous and that is why it is not tried. Sophistry is the underlying flaw, sophistry of which dermatologists, chemists, and a battalion of internists, are equally guilty. The fact remains that nothing is known of the cause of psoriasis today, but a great deal about that of eczema, and eczema clearly is not often related to this type of metabolic disturbance, but to another group of phenomena, as will be shown below.

About fifteen years ago, Schwartz and I found the blood sugar raised in a substantial minority of cases of skin suppurations, like acne, and in the seborrhoeas. At the same time, Pels reported similar findings with reference to the erythemas. The late Dr. McGlasson came to similar conclusions as to eczema. Thus a wide range of unrelated dermatoses have been ascribed to disturbed carbohydrate metabolism. What is true, evidently, is that many people with a variety of skin diseases also have hyperglycemia. From this point on, what was said in the previous paragraph may here be repeated with equal force. But the superstition persists that candy is equally responsible with red beef and burgundy for a great many disturbances we know nothing about, the explanation of which will some day be found in a yet undiscovered infection, idiosyncracy or disturbance of pubescence or the autonomic nervous system. Scientific dermatologists know this and treat the fact with humility, with the personal risk that often recompenses intellectual honesty, while less sincere or less well trained colleagues reap a harvest with jejune fallacies which satisfy a public demanding tangibles however wrongly conceived. Pragmatism thrives on sophistry.

Two known disturbances of the ductless glands cause the skin manifestations of myxedema and Addison's disease. The con-

genital epidermal dystrophy gives evidence of being the result of a deranged thyroid, and ichthyosis may be so occasioned. For this reason, all forms of excessive dryness of the skin and hyperpigmentation have been glibly adopted as related to the conditions above, and the amount of thyroid substance empirically administered for such dermatoses cannot be estimated. Realizing that most inflammations end in scaling, and many in hyperpigmentation, without any evidence of ductless gland effect, it can be readily understood how faulty any reasoning is which ascribes to the endocrines any and every manifestation not otherwise explainable. Proof is needed, and proof is exactly what is lacking. Undoubtedly some skin changes are so caused, although they have not yet been classified with any degree of plausibility, let alone precision. But ten years ago the wish was father to the thought and the wish was translated into action. The only scientific evidence admissible would be the cure of a skin disease under endocrine therapy, without local treatment, as may happen in myxedema, or the production of skin lesions by suitable experimentation, or consistently in relation to gland disease, as in the Addison syndrome. An eruption plus lowered or raised basal metabolism cannot be interpreted in terms of cause and effect. Only the possibility that such a thing may occur is conceivable except in minds too sanguine to be scientific. Not only dermatologists of easy conviction, but internists have fallen into this error. Unreasoning optimism fosters sophistry.

The majority of infectious skin diseases are simple to understand and not difficult to control. Perhaps tuberculosis is the hardest to treat effectively. But conditions like tuberculosis, lepra, rhinoscleroma, the fungus dermatoses, the various suppurative affections, are at least etiologically clear. Much is still unknown, but not in respects materially affecting practical medicine. It is rather the doctrine of focal infection that stimulates flights of dermatologic fancy. The mere fact that countless teeth and tonsils have been extirpated unnecessarily recalls the craze for oophorectomy about thirty years ago. Past folly always seems ludicrous. We lack perspective about our own. This absence of reason is not vicious. Teeth and tonsils are not ovaries, but the attitude governing the surgical application of our focal fetish is the same as that of yore connected with the sacrificial ovaries. It is as stupid. Not teeth and tonsils alone may be the sites of focal infection. Moreover the presence of a focal infection cannot possibly explain every other coexisting illness. It may, but the burden of proof is rarely carried intelligently. It is easy to be misled. I recall a patient with dermatitis exfoliativa who seemed to be succumbing to it rapidly. He had about a dozen stumps of teeth left, many of which were infected. In order to spend his last days in buccal comfort he had the teeth drawn. The idea had not occurred to me. Within a week his skin was normal. Thus inspired, I ordered the infected teeth extracted of my next similarly affected patient. All that disappeared was the teeth. It is known that the eruption in question is seen in general tuberculosis, leucemia, Hodgkin's disease and mycosis fungoides. Was the healing of the skin in the case reported coincidence, or due to the extraction of the teeth? It might have been either.

The most serious sophistry engendered by the doctrine of focal infection arises as the following will illustrate. A paper on zoster was being discussed at a dermatologic meeting. One speaker declared the disease was due to focal infection. He animadverted to teeth and tonsils and supported his contention by stating that zoster treated on this assumption did not recur. Zoster is a self-limited disease that rarely recurs. It acts as though it were due to a specific infection producing permanent immunity. In view of this, the absurdity of the speaker is patent. Here is sophistry plus. Another writer has said the same sort of thing about pityriasis rosea, making a similar type of error. Pityriasis rosea is a characteristic, self-limited exanthem, occurring mainly in two epidemic peaks in the spring and fall. I have seen hundreds of cases and have yet to observe a greater incidence of tonsil disease in people with pityriasis rosea than in people otherwise diseased or with normal skin. Lupus erythematosus, eczema, prurigo, urticaria, psoriasis itself have been ascribed to focal infection, and the tonsils always or teeth, are incriminated as if other foci might not exist, or as if any new etiologic hypothesis could fail to be a blanket explanation for everything unexplained. And always, save for temperate conservatives, new theories are exploited. Nor

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is the specialist solely to blame. The general practitioner, too, lured by something tangible and ready-made, joins the orgy of half-baked reasoning, subscribing in practice to what he pretends to mock in theory. There is no doubt that focal infection is a significant phenomenon, but there is no reason to believe it consistently accounts for a single skin disease. No scientific evidence of its doing so has been furnished by any of its protagonists; instead they have emitted the thinnest of vaporing—subjective miasma, sophistry.

An ancient concept of the cause of disease is idiosyncrasy. It must be a fundamental one for it has cropped out again and again with renewed force and in many guises. Anaphylaxis, allergy, atopy, susceptibility, hypersusceptibility, are among these. They may have slightly different shades of meaning, but are not essentially unalike. Disease, broadly speaking, is due to the response of tissue to an injurious agent. In part, the virulence or poisoning potential of the agent is the determining factor; in part the peculiar receptivity of the tissue. The differences in individual reaction to a given poison, the fact that the strength or concentration of a poison may be important elements in the interrelationship indicate that a tissue is in some way peculiar if it reacts to the poison. Sometimes exposure to poison increases the resistance of tissue to it, sometimes it increases susceptibility. This depends either on the tissue, or the poison, or both. But here, too, the tissue must be regarded as peculiarly endowed. Nor does it alter the basic fact if the poison is manufactured in a pathogenic parasite, or in the course of ordinary or disordered metabolism, or is incorporated into the body, or applied to the body from without. Nor does it make any difference if the agent is chemical or physical. The underlying mechanism producing disease is an interreaction between a tissue and a poison. Doubtless the peculiarity inheres as much in the poison as in the tissue, but since man views things from the human standpoint, it is natural that he should think mainly in terms of his own organic structure. Hence, it is easy to understand why he ascribes the peculiarity to his own tissue. For this reason, disease must be regarded as the result of a peculiarity enabling tissue to react in a manner that produces the disease. This is idiosyncrasy, or if, subject to certain details of the mechanism, another designation is preferred, the unalterable fact remains that disease exists because inherently tissue has the capacity to become morbid. All investigation and experience from the time of Richet to date corroborate this utterance—but this is a biologic, not a clinical concept.

Nearly fifteen years ago in an intensive study of the nature of eczema, I was convinced that three factors were involved in producing the disease, predisposing and precipitating causes, and skin receptivity. The details supporting this belief are too numerous for present recapitulation. Incidentally, it may be remarked that since then I have come to the conclusion that the same factors prevail in the production of all inflammatory dermatoses, whether infectious or not, and in some other skin conditions. Nor have I reason to doubt that all disease conforms to this interpretation. Following Schloss' striking publication on egg albumin urticaria, urticaria and related conditions were studied by means of percutaneous tests with foodstuffs and other products, and a certain amount of valuable information was gathered, but many inconsistencies in the method developed. In the meantime, similar tests were made in eczema with thoroughly disappointing results.

About seven years ago, Bloch, in Zurich, and I, in New York, ignorant of each other's work, published studies on eczema largely substantiating the point of view I had expressed long before. Experimentally the need for a precipitating cause was established by applying to the surface of the skin suspected agents. The method employed was that of Markley, of Denver, in his case of guinea pig dermatitis. Thus, certain agents proved to be precipitants, others not. Simple examples of the phenomenon are rhus or bichloride dermatitis. In short, dermatitis venenata and eczema are conditioned by the same pathogenic machinery. Predisposition must play its role, or everyone would always be having dermatitis venenata. The skin must be receptive for a like reason. Thus the causative trinity is demonstrated. The important links in the chain are the receptivity of the skin and the precipitant. Bloch applies to this the term allergy. I applied no term. Only the validity of the phenomenon seemed important to me. What it was called did not. More recently it has been dubbed atopy. Just what the satisfaction

is in the act of increasing nomenclature is not quite apparent. The old term idiosyncrasy would answer quite well enough.

The term allergy, however, has taken hold. Now something is being done that it would be impossible for Bloch to do, or Klunder or any one else that understood the principles of biology or the rudiments of pathology. Dermatitis is being called allergic dermatitis on mere inspection. All dermatitis, all dermatoses are, or at least may be, allergic, and no one on earth can possibly discern, merely by looking at a case, if it is allergic. The proof is not forthcoming unless established. And yet the facile ocular dermatologist beholds a case and utters the fiat "allergic dermatitis." As a matter of fact, and by similar reasoning, "dermatitis venenata" is a faulty concept, for how can it be stated on inspection what the nature of anything is? Such facts must be demonstrated. They are nothing objective; they are processes, not things visible, palpable or perceptible. But the illiterate rush in where angels fear to tread, and the word omitted from the quotation perhaps describes them. Who can say, sophistry may only be folly, and sophists—but why be rude?

Clinically, to call dermatitis allergic dermatitis, is to say the patient has the syndrome because it's a gift, a talent, a peculiarity of his skin. It is, in short, equivalent to saying nothing nearly as convincing as what the skin has said by presenting the eruption. Thus, allergy, offered as a name, in itself unimportant, for an important phenomenon, has become overemphasized, while what it designates is evidently not understood. The tail wags the dog to the accompaniment of ignorant pedantry enthroned and nodding an unperceptive head. This is the tragedy of all science bandied about by those who pursue it for ulterior ends rather than because of love for the truths it may unveil.

Physiotherapy plays an important part in cutaneous medicine. Leaving out any reference to electrolysis, the knife, the cautery, surgical endothermy, diathermy, and radium, let the discussion be confined to the roentgen ray. Obviously the purpose of medical practice is the cure or relief of sickness. No one other agent is as valuable as the roentgen ray in dermatology, and it is largely to the efforts of George MacKee that the method of its application has been simplified so that the agent can easily and safely be employed. But this very fact has placed it within reach of the superficial or ulterior minded who have not sharply appraised indications and contraindications, and who employ radiotherapy when other treatment should first be exhausted; or who prefer ease to the strain of thinking. Fortunately, the instinct of self-preservation guarantees mechanical care, so that patients are not often injured, but, to my mind, general treatment of skin diseases will suffer in quality if the tendency to exploit the roentgen ray beyond its value persists. More and more dermatologists are reverting to this point of view after a positive bacchanal of rotengenization of which the last to approve would be seasoned men like MacKee, Pusey and many like them. The salvation of youthful enthusiasm is that time cures the disease, and the greatest abusers of the method are mellowing as their crow's feet appear. Nevertheless, a substantial minority of dermatologists and a host of dermatologic camp followers are still too avid as to machinery and inert as to mental exercise. But worst of all are the numerous physicians who refer patients to dermatologists with instructions to have an eruption "X-rayed." Here the sophistry is mostly with the internists except as to acne, the one condition in which roentgen ray treatment should perhaps be used without temporizing, because, on the whole, it cures acne faster and more frequently than any other management. And this is the one skin condition internists waste most time over with methods already regarded as inadequate a generation ago. A sop to science is the use of vaccines which in acne, at least, are practically valueless. So much for internists as dermatologists. Sophists? Let us be kind, yes.

Thus, omitting further immediate reference to mechanical therapy, it will be seen that modern dermatology differs from the older in its approach. Dermatology has become a special branch of general medicine, after having been detached therefrom apparently because of Willan's early death. The tendency is an enlightened one, however greatly sophistical abuses have crept it. Undoubtedly the union between dermatology and general medicine grows firmer day by day. Dermatology now may fairly be considered cutaneous medicine, a dermatologist an internist with special knowledge of the skin. A dermatalogist must

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be as conversant with general medicine as a general physician. He must know clinical medicine, serology, bacteriology, biochemistry, histology, immunity in relation to his specialty. He must have mastered physiotherapy and all other forms of treatment in their application to skin affections. And the ground work must be a thorough mastery of that ancient clinical dermatology, that descriptive, overdesignated old dermatology—in itself so curious—indeed, when detached from its context so ludicrous, and yet with all the dignity of the old regime, with all the importance of the alphabet and multiplication tables. Conceived in these proportions, and in these proportions it must be conceived, if internists choose to continue ridiculing, belittling dermatology and dermatologists, it will be the mockers rather than their targets that future generations will hold to scorn. The scope of the internist is rather less than that of the dermatologist.

Moreover, internists, if they cannot or will not become conversant with the skin, at least must respect those who do. The bed-side manner may excite euphoria in a cardiac, what with a slap on the back and a hearty, "well, how are we today, old thing?" But it can't remove skin lesions or stop itching. The patient with an eruption can use his eyes too and knows whether or not he is getting better. The dermatologist can accomplish little through suggestion, as can an internist treating his patient who no more is able to observe their internal lesions than the physician himself, and who knows as much, and, in truth, as little about them as he does. With all respect and a little reverse English, internists are invited to reflect on these matters and then decide whether they or the dermatologists are better entitled, if either are, to laugh at the others.

This, then, is the case for dermatologists. What is the case against them? It may be summed up in the statement that not enough of them conform to the necessary standards of training and equipment. The fault is less theirs than that of the narrow and inadequate basic training furnished by medical schools. Biology, chemistry, physiology, a reading knowledge of scientific German and French, are not sufficiently emphasized in the pre-medical curriculum. The medical curriculum is too much designed to train men for competitive examinations for internships, and internes are too crowded with routine to become more than artisans. Thus medical training is a warped thing. Its effects are apparent in all branches of medicine, and but few individuals can surmount early handicaps. No one would be a worse practitioner for not having his mind and individuality crushed out, whether he practiced general medicine or a specialty, even dermatology. With this apology in mind, and in the hope that a dean or two and a few faculties will see the point, it is submitted that some dermatologists are sound, some of them passable, and that many are sophists. They are graded like all other human beings. If a dermatosis is viewed from the general medical standpoint it is of first rate importance for the specialist to realize when the condition is local. If a dermatologist is an internist in cutaneous medicine, he must be sure to realize when a skin disease is external.

To put a case of scabies on proteid-free diet, to determine the basal metabolism in a frank case of impetigo, to extirpate teeth, tonsils and other organs *ad libitum*, for a self-limited dermatosis, to fancy it an accomplishment to add "allergic" to a noun, to say "good morning, you must be X-rayed," to a new patient, without first applying thought to the matter, are veritable abuses, and thoroughly inexcusable. Though they should not be condoned, they are no worse, however, than the bedside manner that overlooks an aortic aneurism in a patient advised to sojourn in France, see the Loire, and dally on the Riviera for over-strain, particularly if the patient happens to die of aforesaid aneurism the day before the scheduled sailing.

So much for the pot calling the kettle black! The positive accomplishments in dermatology in the last generation are: first, that the specialty has been raised to the standards of general medicine; second, that it is no longer a detached thing characterized by a meaningless vocabulary; third, that many skin conditions formerly just "diagnosed" now are cured. Among these are: acne, with the roentgen ray, lupus erythematosus, with gold; lupus vulgaris, with the Finsen ray; ringworm of the scalp, with the roentgen ray or thallium; and another dozen conditions, formerly regarded as hopeless, that can be ameliorated by one of several methods.

This paper grows too long; but may a few words more be added? Biochemistry, im-

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munology, serology, endocrinology, will one day, when properly applied to cutaneous medicine, further elevate it. Substantially, disturbances coming under these captions are in a large measure the cause of skin diseases. The ground work is sound, but the methods of investigation and of applying the principles involved are still crude. The future of dermatology depends on greater refinement of methods and greater ingenuity in their application. The coming knowledge of vital staining, ferments, surface tension phenomena and colloid chemistry, immunity and protection, will bring us a knowledge of dermatology still only conceivable as a dream. The realization of this dream will dispel sophism in dermatology as it will sophism in general medicine. Who can state that sophism does not merely reflect the human equation, or that physicians exceed in this quality other men?

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ABDOMINAL HEMORRHAGE OF OVARIAN ORIGIN—CASE REPORT.

By BEVERLEY F. ECKLES, M. D., Galax, Va.

Mrs. M. L. C., aged 33, was admitted to St. Luke's Hospital, Richmond, Va., on April 4, 1925, at 1:30 A. M.

History.—She had two children, one a boy of 8½ years, the other a girl of 5. She had had a miscarriage seven years ago, followed by bleeding for which a curettement was done. Her menstruation was regular and normal, without pain. The last two periods were very slight.

Present Illness.—On March 5, 1925, while menstruating, she moved a heavy chair from one end of her apartment to the other. Next day she had severe pain all across the lower abdomen. It was a continuous dull pain that lasted twenty-four hours. Two weeks later it returned for a day, and then at three-day intervals she had recurrences which made her feel faint, thirsty and smothered.

March 27th to 31st, she passed through a normal menstrual period. This was followed by abdominal pain which was continuous and accompanied by a feeling of faintness.

During the night of April 3rd the child with whom she was sleeping kicked her in the left side, producing such intense pain that she got up and came to the hospital.

Examination.—She walked to her room where immediate examination showed temperature of 99.4°; pulse 120; respiration 24; blood pressure 110/60. She was slightly pale. The abdomen was not distended, but was generally rigid, with tenderness through both lower quadrants, being a little more marked on the right side, where pressure caused her to complain of a faint and nauseated feeling.

The blood showed a total white count of 15,400 with 79 per cent polynuclears.

The urine was acid, with a trace of albumen, abundant acetone, and occasional pus cells and hyaline casts.

She was given morphine and an ice-cap, and became more comfortable but did not sleep. At eight o'clock her temperature was 98.4°; pulse 86; respiration 20. Acute appendicitis was diagnosed and operation advised.

Under anesthesia a pelvic examination disclosed a freely movable uterus. There were no pelvic masses, but the vaginal fornices and cul-de-sac felt boggy.

Operation.—A McBurney incision was made and the abdomen was found to contain a large quantity of free blood. Median section was then done and the blood was removed together with many large clots. Rapid inspection showed the uterus somewhat enlarged but otherwise normal; both tubes and the right ovary normal and the left ovary ruptured. The left ovary was removed with its tube. The appendix was very much thickened and subacutely inflamed, so appendectomy was done. The wound was closed without drainage. (Operation by Drs. Peple and Eckles).

Her post-operative convalescence was without incident, and she left the hospital in splendid condition. She has been heard from a number of times since she left and has remained in good health.

Pathologic Report.

This report was made by Dr. S. W. Budd.

Gross Description.—The ovary measures 2x1½x1 inch. The capsule is pitted and shows a definite increase of fibrous tissue. In the substance of the ovary there are a number of small cysts which can be seen shining through the capsule. On the portion of the ovary nearest the fimbriated end of the tube there is present a blood clot about the size of a marble. On sectioning the ovary there are seen numerous small cysts.

Microscopic examination of the ovary in the

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region of the clot shows the ovarian tissue to be heavily infiltrated with polymorphonuclear leucocytes and other evidence of inflammation. The ovarian tissue cells are widely separated by blood. There is no evidence of pregnancy in this ovary, nor is there any evidence so far that the hemorrhage originated from a follicle. The most likely point of origin of the hemorrhage is from a corpus luteum cyst rather than from an atretic follicle, though this cannot be definitely determined in the specimen.

The pathologic findings are an acute ovaritis with massive hemorrhage and a ruptured capsule.

The tube is a small fibrous tube slightly congested. Microscopic examination shows rather marked increase in fibrous tissue, and a decided dilatation of the vessels of the serous coat.

The Appendix is large, congested, edematous, and shows much new formed connective tissue in its serous coat. The lumen is dilated and patent throughout. It is filled with inspissated feces. The mucous membrane is red and congested, but there is no pus within the lumen nor in the appendiceal tissues.

The pathologic diagonsis is:

1. Subacute appendicitis.
2. Subacute salpingitis.
3. Acute ovaritis with massive hemorrhage and rupture.

Incidence.

Consideration of the ovary as a source of hemorrhage is unusual in the experience of most of us. Consequently, the statement of Bovee[1] that "no other organ of the body is so frequently the seat of hemorrhage" is arresting but does not appear extreme when we consider that it includes all degrees of hemorrhage from a wide variety of causes. For instance, slight hemorrhage from the follicle is regarded as a normal incident of ovulation. Also, new growths, both benign and malignant, have been frequently responsible for ovarian bleeding. Hemorrhage into the walls or the interior of ovarian cysts occurs, either at or subsequent to twisting of the pedicle, and ovarian pregnancy with hemorrhage, while extremely rare, has been recorded.

Taking all these sources into consideration then, ovarian hemorrhage must be conceded to be of frequent occurrence. In spite of this frequency, however, it is rather uncommon for the loss of blood to reach such proportions as to constitute a clinically recognizable hemorrhage, and in surgical practice it is really rare to find massive hemorrhage arising from a corpus luteum or an atretic follicle.

In 1917, Novak[2] found thirty-nine recorded cases of such hemorrhage of ovarian origin, to which he added another. These are exclusive of the cases of hemorrhage resulting from ruptured ovarian pregnancy or from the occasional rupture of large ovarian cysts.

Frequency.—It is believed that this condition is more common than the published case reports would indicate. In 1923, Strauss[3] reported a case and referred to two others, those of Smith and of Gordon Taylor. He said that "Smith reported his case before a meeting of gynecologists, and, in the discussion that followed, it was evident that many surgeons had encountered similar cases, but had not reported them. The result is that today the investigator believes it is a rare condition because of the few cases in the literature and the brief mention of it in the gynecologies, whereas, follicular or corpus luteum hemorrhage should really be considered not uncommon."

Causes.—Novak calls this "perforative ovarian hemorrhage," and says its causes are similar in a large measure to those of the non-perforative type in which the hemorrhage is confined in the ovary, giving rise to hematomas of various sizes. Predisposing causes are those conditions bringing about hyperemia of the ovary with engorgement of its vessels. Menstruation bears an intimate relationship, Bovee stating that nearly all cases occurred during menstrual life, most of them at or near a menstrual period. Of exciting causes, trauma is by far the most important.

Pathology.—Graves[4] says "Blood cysts of the ovary may result from the internal bleeding of follicles or corpus luteum cysts. According to Von Franque, hemorrhages may occur in the ovarian stroma in cases of chronic oophoritis which causes a special frangibility of the blood vessels. Such hemorrhages take place at the menstrual period, and repeated hemorrhages at consecutive menstruations may cause blood-cysts of considerable size. The fresh outflow of blood may produce severe pain and serious symptoms, even death."

Bovee believed that in most cases of stromal hemorrhage there is a chronic ovaritis, result-

ing in the development of additional connective tissue which prevents the rupture of the graafian follicle and causes its retention as a cyst. This sclerotic condition is followed by fatty degeneration of the blood vessel walls of the stroma, which favors rupture of the vessels, congested incident to ovulation, allowing the blood to escape either into the stroma or into the cysts.

Follicular hemorrhage is not so commonly associated with infection as the stromal hemorrhage is, but may itself be a cause of the stromal variety.

Whatever the cause, the bleeding practically always occurs from the thecal vessels of structures derived from graafian follicles.

Schumann[5] believes "that when massive hemorrhage takes place from an ovary there is usually, if not always, to be found some disease of the ovarian blood vessels. Normal ovaries do not give rise to massive hemorrhage."

Symptoms and Diagnosis.—Since symptoms generally are proportionate to the underlying organic disease, it follows that where the hemorrhage is slight the symptoms will be vague and indefinite. In such cases the diagnosis cannot be made with certainty, as there are no characteristic signs of this condition. However, since a few days' rest in bed is all the treatment necessary in this type, the exact diagnosis is not a matter of great practical importance. In graver degrees of hemorrhage, the most characteristic symptom is pain, usually throughout the lower abdomen, but occasionally more marked on the affected side. With the pain there will be evidences of internal hemorrhage varying in degree with the amount of blood lost.

The condition has apparently never been recognized prior to operation. Novak found that in eight cases acute appendicitis had been diagnosed and in nine ectopic pregnancy.

Crossen[6] remarks that "as in the vast majority of cases of spontaneous pelvic hemorrhage the cause is extrauterine pregnancy, this affection must be excluded in any particular case before any other diagnosis is permissible." Both Bovee and Schumann, however, have called attention to the grave injustice that may be done by diagnosing ectopic pregnancy without microscopic confirmation.

Treatment.—Where the loss of blood is trivial and the symptoms are indefinite, rest in bed and the relief of pain may be all that is necessary. In these cases the condition may be suspected, but cannot be proved.

Where the hemorrhage is greater, the rules governing the treatment of ectopic pregnancy apply. These cases present symptoms of an acute abdominal crisis necessitating an operation, at which the condition will be revealed. Removal of the ovary will nearly always be necessary; but sometimes it will be possible to control the bleeding by suture without resection.

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THE DIAGNOSIS AND TREATMENT OF STERILITY.*

Case Reports of Pregnancy.

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The subject of sterility covers such a large field that time does not permit a full discussion. This paper will be limited to the activity of the spermatozoa, the cervix and fallopian tubes, making mention only of many other phases which are operative in the act of reproduction.

The failure of efforts to establish the reproductive function are frequently due to the lack of knowledge of the physiology necessary for impregnation; in addition, the misunderstanding of the part played by existing pathology and the failure to differentiate between the physiologic and pathologic.

In listing the requirements for impregnation on the part of the male, we name first, normal production of spermatozoa. Without normal production, the examination, study and

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treatment of the female is not only useless but may even be detrimental to the patient and to prestige.

Normally, the male germ cells are developed in large numbers in the testicles, stored in the seminal vesicles until orgasm, at which time if there be no obstruction in the passages, several million sperm are ejaculated. If a specimen is taken from a condom or from the cervix and placed on a warm slide, inspection through the high power of the microscope will reveal at once a half dozen or more actively motile spermatozoa. These sex cells will be seen easily crossing the field against any current that may be present. A single sperm will often cross the field in five seconds. The presence of pus or bacteria are abnormal. There are variations in shape and motility of different sperm but any gross irregularity in shape must be considered abnormal.

According to Macomber, there are seventy-five to 125,000 sperm present in each cubic centimeter of normal semen with a total of 300 to 500 million sperm in one ejaculation. Here is a valuable point in sterility—although it requires only one spermatozoa to pierce and fertilize the ovum, any gross reduction in the number of sperm ejaculated goes hand in hand with lowered fertility, due to the lessened number, and frequently to lessened vitality of the sex cells.

The passage through the vas deferens, seminal vesicles and urethra must not be obstructed. Neither must there be any reduction of sperm vitality produced by contact with pus or chemical action during the exit. It is believed that in the normal the sperm are ejaculated directly into the cervical canal and that those that are to seek the ovum begin immediately upon their travel through the cervix into the fundus and fallopian tubes. If in the case of hypospadias or strictured urethra, the sperm are deposited in the vagina, or dribble out after the organ becomes flaccid, the immediate injurious effect of vaginal secretions may so lower the vitality that fertilization becomes impossible (Huhner.) At this point someone may ask, "How then do we have fertilization when the sperm are ejaculated only on to the vulva surface?" Usually in such cases the female is unmarried or a virgin, and the chemical action of these vaginal secretions are not so injurious as are those in the married woman. We rarely see pregnancy follow coitus interruptus in the married. The normal cervix either aids in the act of conception or it produces one of the greatest obstacles and barriers to impregnation.

The physiologic cervical secretion is small in amount, alkaline in reaction, and crystal clear. Microscopically, it contains an occasional white blood cell but no bacteria. Conditions of chronic hyperemia and low grade inflammation change the secretion in color, amount and consistency so that it becomes tenacious and plugs the cervical canal. This type of mucus will entangle the slender spermatozoa, hinder its progress upward, and at times entirely block the passage. The chemical activity of the pathologic acid mucus lowers the vitality of the sperm and they quickly die.

Other causes tending to produce such disturbed conditions in the cervix are trauma, frequently produced by dilatation and curettage. The dilatation in itself may occasionally be beneficial if lacerations are not produced but the curettage in the most of instances has no physiopathologic grounds for its use. It has been proven by Curtis that the corporeal endometrium does not harbor chronic infection, and why we should persist in traumatically removing a normal endometrium in hope that replacement with the same kind of tissue will aid in fecundation is beyond imagination. The body of the uterus plays practically no part in fertilization except as a passage for the sperm in its progress to meet the ovum. Our destructive curette may result in an atrophic endometritis which inhibits the proper nesting of a fertilized ovum.

The so-called erosion of the cervix plays its part preventing conception by changing the reaction of the mucus, helping to produce an abnormal secretion through the admission of bacteria and the production of chronic infection. There is no actual destruction of tissue as is indicated by the term "erosion" but there is an over-growth of columnar epithelium from the cervical canal which reaches down and covers the squamous epithelium normally present on the vaginal portio. If we examine the cervical mucus two hours after coitus and find normal active spermatozoa in good quantity we can immediately eliminate the male as a cause and almost entirely exclude the vagina or cervix. If the cervical mucus is free of sperm or contains only dead sex cells we must

then examine a warm condom or bottle specimen. If this examination reveals normal spermatozoa, either the male fails to deliver properly, or the cervical secretions are inimical to the life of the sperm and the cause must be sought.

If, after complete physical and laboratory examination of the male and female we are unable to find a cause for sterility, we must enter into a careful study of the function of the fallopian tubes. How unscientific it is for one of us to advise a dilatation and curettage

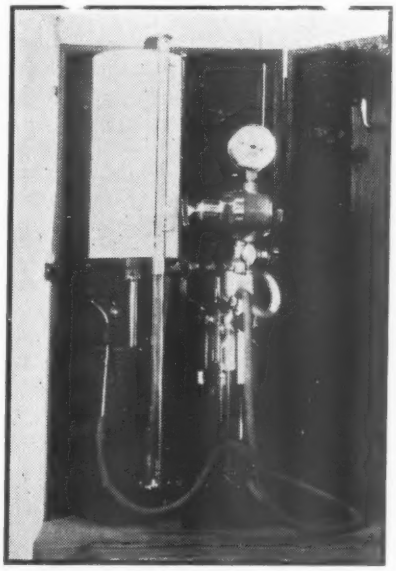

Fig. 1.—Improved apparatus now being used for uterotubal insufflation. The use of the Kymograph enables us to preserve a graphic chart of the activity of the tubes.
Upper Left—Kymographic drum.
Below—Mercury manometer with float and writing pen above.
To Right—Glass Syphon meter.
Below—Pressure reducing valve with gauge above. Carbon dioxid cylinder behind.

when the necesarry male sex cell has not been proven normal and the very important patency of the fallopian tubes has not been established. If a uterine sound will pass through the cervical canal, certainly the spermatozoa will. The fallopian tube is a four-inch musculo-membranous canal connecting the ovary with the uterine cavity. It is divided into four parts, the interstitial or uterine, the isthmus or narrow portion, the ampulla or dilated part, and the fimbria which is a turning outward of the lining membrane of the tube. This fimbria contains the abdominal opening which is only two millimeters in diameter while the uterine aperture is even smaller. The tube has an outer layer of longitudinal muscle, an inner of circular muscle continuous with the uterus. The mucous membrane is thrown into folds or villi, and the epithelium is ciliated. It is necessary that we be familiar with the anatomy of the tube in order to understand the results produced by transuterine insufflation. All the work in connection with this test has followed the able leadership of Rubin, and credit is due him for giving us this great diagnostic aid.

The best time for making the Rubin test or transuterine insufflation is seven days after menstruation, the patient having refrained from coitus during that interval. At this time the endometrium is quiescent and the tube not congested. The test is contraindicated in the

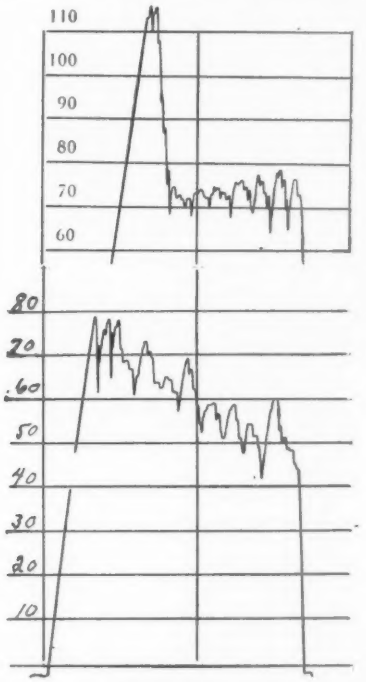

Fig. 2.—The lower line shows the activity of normal fallopian tubes. Pressure below 100 m.m. of mercury and distinct manometric fluctuations. The upper chart would indicate some impairment of patency. Pressure arising above 100 m.m. but below 150 m.m. manometric fluctuations present.

presence of fever, pelvic inflammation, salpingitis or purulent vaginal discharge. Strict asepsis is absolutely essential. The injection may be made with oxygen, carbon dioxide or air. We prefer not to use oxygen on account of its irritability. The apparatus consists of a small tank of carbon dioxide, a reducing

valve, mercury manometer, water filter volumeter, intrauterine cannula and nozzle. At the present time we have under construction in New York a recording device similar to the smoked drum used by Rubin. This will afford for study a pen and ink sketch of the activity of the fallopian tubes during insufflation. The normal tube produces sufficient resistance to force the column of mercury up to 100 m.m. when it drops ten to thirty points and continues to fluctuate so long as the gas flows in. An increase in intra-abdominal pressure (produced by a brisk cough) during the test is registered by a rise in the mercury. If the tubes are closed there will be no rise. The gas may be heard passing in by auscultation over the abdomen, provided there is no cervical leakage. In order to detect this leakage we fill the vagina with sterile water. Shoulder pain on assuming the erect posture is characteristic of patency. Fluoroscopic examination will demonstrate the gas intraperitoneally and is a positive proof of patency. There are patients who have spasm of the circular fibers of the tube which partially or completely obstructs it. Following the suggestion of Meaker we have used antispasmodics prior to insufflation and produced pneumo-peritoneum where it had failed previously. Meaker reports several cases of pregnancy following the post-coital use of antispasmodics in this type of patient, and we have had one such experience. In certain cases we believe the tubes to be temporarily plugged with mucus or the fimbria closed by fine adhesions which causes an excessive initial rise in mercury followed by a sudden drop when the obstruction is removed. According to Rubin an initial rise of 100 m.m. or more, followed by a drop with little or no fluctuation, is characteristic of stricture. If the pressure rises to 200 m.m. and remains there it is positive evidence of obstruction.

The treatment of sterility depends upon the diagnosis and it is not only unscientific and detrimental to our reputation but unjustifiable to recommend medication and surgical inter-

No.	Name	Age	Date	Onset Menses	Type	No. of Days	Amount	Yrs. Married	Previous Diseases	Contraceptives	Freq. Coitus Per Week	Painful Menses	Desire	Previous Operation	React. Vagina
1	H	28	10–23	13	28	5	Mod.	4	o	Douche	2	No	o	Thyroidectomy D. & C. & Stem.	A
2	C	27	11–24	16	28	5	H.	1	o	o	3	Slgt.	o	o	A
3	R	26	7–26	12	28	3	M.	6	Measles; Mumps; Typhoid fever; Malaria	Condom 2 yrs.	2	o	...	o	A
4	S	32	4–26	13	28	4	M.	5	Measles	o	?	o	o	Appendectomy Suspension	A
5	H	28	4–27	14	28	4	M.	3	Measles	o	2	.....	...	o	A
6	K	25	11–26	15	21	5	M.	4	Scarlet fever; Diphtheria; Mumps; Measles	Coitus interruptus 2 yrs.	1–2	o	o	o	A
7	P	30	7–24	13	26	3	Sc.	5	Mumps; Measles	Condom and Douche	2–3	o	...	o	A
8	S	24	7–25	14	28	5	H.	4	Scarlet fever; Diphtheria; Mumps; Typhoid fever; Appendicitis	Condom	2	o	...	D. & C. Stem Appendectomy	A
9	H	26	3–24	14	28	4	M.	5	Measles	Douche	2	o	o	o	A
10	J	34	2–27	13	28	4	M.	4	Measles	o	1–2	o	o	Myomectomy	A

NOTE: This table reads across both pags.

vention without grounds for either. It is also misuse of a patient's confidence to make her believe she can or cannot become pregnant without facts to warrant the statement.

The failure of the male to produce normal sperm, in the absence of infection or gross pathology ,can often be corrected by improvement in diet, rest, change of surroundings, outdoor living and exercise. A male sterile from excessive coitus may quickly become fertile by the correction of this error. Reynolds and Macomber have shown conclusively in white mice that a deficiency in calcium always produces a state of lowered fertility and even sterility. Blair Bell, of Liverpool, has rendered many women fertile by adding calcium to their diet. An infection or obstruction to the genito-urinary tract should receive appropriate attention on the part of the urologist. An old chronic prostatitis may be a cause of lowered fertility in the male. The research of Macomber demonstrated that the mating of male and female, both of lowered fertility, resulted in infrequent, or no conception, while the mating of two highly fertile adults resulted in frequent conception.

Stricture or hypospadias must be corrected if the male fails to deliver sperm on to the cervix.

A cervix, the seat of simple erosion, is best treated by radial cauterization with the electric knife. Chronic deep-seated infection of the endocervix that destroys the sperm can be corrected and often followed by pregnancy if we remove the glandular portion of the cervix and make a new canal as devised by Sturmdoff.

Displacement of the cervix by anteflexion or retroversion does not require treatment in itself if spermatozoa are found in the cervical mucus. There may be an associated stenosis, however, which would require correction. The presence of small submucous or intramural fibroids may prevent conception and their removal be followed by pregnancy. We have

React. Vagina	Cervix	Cervix React.	Uterus	Ovaries	Urine	HB.	B. P.	Sperm	Tubes	Insufflation	Treatment	Conceived In
A	Posterior	Ft. Acid	Slight retroflexion	Neg.	Neg.	70%	110–80	Active	Patent	100–60		30 Days
A	Posterior	Acid	Anterior	Neg.	Neg.	87%	125–80	Active	Spasm	120–60	Post-coital Atropine	7 Mos.
A	Posterior	Alk.	Anterior left	Neg.	Neg.	80%	120–80	Active	Stricture	190slow to 160		7 Mos.
A	Mid. Pos.	Alk.	Anterior	Neg.	Neg.	80%	110–85	Active	Spasm	140–60	Doda Douche	7½ Mos.
A	Posterior	Ft. A.	Retroflexed	Neg.	Neg.	75%	100–70	Active	Patent	95–40	Knee Chest Pos. Pessary	3 Mos.
A	Posterior	Flaccid	Anterior	Neg.	Neg.		115–82	Active	Patent	100–60		3 Weeks
A	Anterior	Neutral	Anterior small	Neg.	Neg.	85%	115–78	Active	Patent	100–60	Soda Douche Dilatation cervix Thyroid ovary	15 Mos.
A	Posterior	Neutral	Retroflexed Tender	Neg.	Neg.			Active	Spasm Mucus	140–80	Replacement Uterus	2 Weeks
A	Posterior	Neutral	Anterior left	Neg.	Neg.	90%	100–80	Active	Patent	100–60	Thyroid ovary. Rest—Diet	3 Mos.
A	Posterior	Alk.	Anterior	Neg.	Neg.	78%	110–80	Active	Patent	125–160–80		2 Weeks

two patients who have conceived after such myomectomy.

The fallopian tube obstructed by mucus, fine adhesions or kinking, may be opened by pressure (not exceeding 200 m.m.) during transuterine insufflation.

In the patient with the underdeveloped or infantile uterus we may use endocrine therapy, ovarian and thyroid extract, but in all probability in these women there is an associated lack of development of the other organs of reproduction, especially the ovaries, which may account for the sterility.

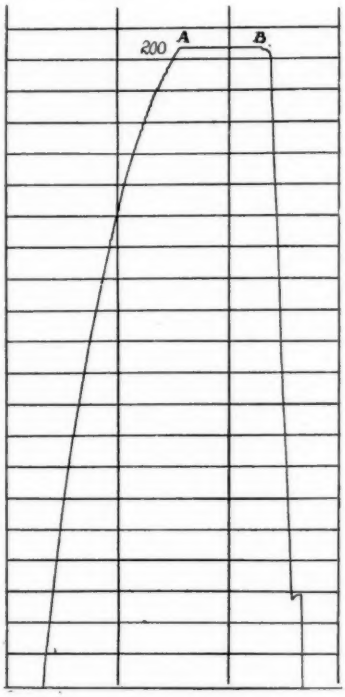

Fig. 3.—Type of chart obtained in complete obstruction. Mercury rises to 200 m.m., remains there. No manometric fluctuations.

Cystic disease of the ovaries and also fibrosis to a certain degree may be due to infection in the lower genital tract, especially in the cervix and therefore early treatment of these conditions may prevent ovarian sterility.

Summary of ten cases of pregnancy following transuterine insufflation and treatment during years 1924 to 1927. Ages of patients, twenty-one to thirty-five.

Menstruation normal in onset, frequency, duration and amount in all.

Duration of marriage, one to six years.

Previous Diseases: Measles ten; Mumps three; Scarlet fever two; Diphtheria two.

Measles, mumps, scarlet fever and diphtheria one. This patient conceived in three weeks after transuterine insufflation.

Contraceptives, douche and condom used by six.

Previous Operations: D. & C. and Pessary two; Appendectomy one.

Dysmenorrhea one. Normal sexual desire four. Vaginal reaction acid ten. Cervical reaction acid four. Cervix eroded three. Cervix chronically infected one. Uterus movable ten. Retroposition three. Anteflexion one. Ovaries negative to physical examination ten. Urine free from albumin and casts ten. Hemoglobin 70 to 90 per cent. Blood pressure, systolic 100 to 125 m.m. Sperm active in cervical mucus ten.

Fallopian Tubes: Patent in six. Spasm in two. Stricture in one. Partial obstruction one.

Four patients conceived without treatment after complete sterility study, including transuterine insufflation.

Three conceived in thirty days.

One in seven months.

Six patients conceived after examination and treatment.

Two in three months.

Two in seven months.

One in fifteen months.

One in two weeks.

Initial rise in mercury during insufflation 95 to 190 m.m. Treatment consisted of alkaline douche, post-coital antispasmodics, reposition of uterus with exercise, dilatation of cervix, thyroid and ovarian extract.

In conclusion, in order for conception to take place, there are four requirements of the male and four of the female. The male:

First, normal production of spermatozoa.

Second, no obstruction in the passages.

Third, no lowering of sperm vitality during their travel through the male passages.

Fourth, normal delivery of the sperm.

The Female:

First, normal reception of the sperm.

Second, no chemical injury to the sperm.

Third, normal production of ova.

Fourth, no obstruction in the cervical canal, uterus or fallopian tubes.

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DIAGNOSIS AND NORMAL DELIVERY.*

By HENRY J. LANGSTON, M. D., Danville, Va.

The committee who planned this symposium on Obstetrics and who assigned the subject to Dr. J. D. Hagood for discussion gave him no instructions as to what it wanted covered. Therefore, after having been requested by Dr. Hagood to take his place and discuss this subject, I have taken the liberty of covering the subject in a way which seems to me to be adequate and satisfactory, and I shall outline this subject as follows:

I. A diagnosis of pregnancy.
II. A diagnosis of relationship of baby to mother and presentation.
III. The management of normal delivery.

I. The diagnosis of pregnancy is not as easy as it first appears to be. There are many things which may confuse us in a diagnosis. Some of these are fibroid of the uterus, ovarian cyst, and a general hypertrophied uterus with menstrual disturbances. Sometimes when we have studied a case most carefully we are mistaken in the diagnosis. In making a diagnosis, each person will have to take into consideration the conditions which may confuse pregnancy. Many of us have seen cases of ovarian cyst, and find that at the same time we have a pregnant uterus. There are others of us who have seen an enlarged uterus which appeared to be pregnant and at the same time the trouble was ovarian cyst. We have likewise seen a fibroid uterus which made us feel that we had not only a fibroid but also a pregnant uterus. This condition is right common. The evidences we have to consider in making a clear-cut diagnosis of pregnancy are morning sickness, general body changes which occur in the breasts, around the vulva, in the vagina and cervix, cessation of menstruation, general increase in body weight, the patient's general appearance being very different from what it was before she became pregnant, with digestive disturbances in addition to morning sickness, disturbances of the bladder, general discomfort in the pelvis, and sometimes backache. The disturbance of the bladder may be of such a nature as to annoy the patient a great deal or only slightly, such as frequent and painful urination, which persists both day and night. The patient's attitude and disposition may be markedly changed. With the general increase in body weight, the patient begins to notice an increase in the size of abdomen, and with the increase in the size of abdomen at about four and a half months after her last menstruation, she begins to feel movements. Then it is that a positive diagnosis can be made on the following basis: Outlining the baby, being able to ballotte it, hearing the fetal heart sounds, and the patient feels movements both day and night. These are some of the common evidences that we have which enable us to make a diagnosis of pregnancy.

The findings on physical examination in such cases are: The character of the skin is generally changed, all mucous surfaces seem to be a little thickened and have more of a velvety appearance, the skin presents a characteristic softening with a little increase in the thickening of it, breasts become larger, there is general pigmentation and a change of the areola, and the nipples show hypertrophy. Examination of the abdomen reveals a uniform mass which rises out of the pelvis. Vaginal examination reveals the vagina increased in size, the mucous surfaces being soft, the cervix is increased in size and very soft, and on bimanual examination we discover that the mass in the pelvis and abdomen is continuous with the cervix, is regular and smooth and more or less soft. If we find no other masses in the pelvis, then we can be sure that our physical examination gives us positive evidence that the patient is pregnant. I feel that we can make an earlier diagnosis of pregnancy than we have been taught to do in most cases by a careful his-

*Read before the South Piedmont Medical Association.

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tory of patient with above named findings. If patient says she has been regular in her menstruations up to a certain date, though she may not have had symptoms such as nausea and vomiting, morning sickness, changed attitude, and we further discover, by examination, the uterus is increased in size, the cervix is soft and there is a general change in the vagina with an increase in its size, we can be sure with such evidences that the patient is pregnant and treat her as such.

II. Diagnosis of relationship of baby to mother causes us to jump from the positive diagnosis of pregnancy now to the hour of labor. An accurate study of the patient should be made up to the hour of labor; note should be made of the patient's weight before pregnancy with reference to her weight at the hour of labor; record should be made of her blood pressure, the urine, the size of the pelvis, and the estimated size of baby. When these things have been done, the next thing we want to be sure of is the position of baby in the uterus at the onset of labor. The following points are significant:

The location of head must be noted,—whether it is in the superior strait, or in the fundus, or transversely, whether it is to the right or left, and whether the occiput is in the anterior or posterior position. If the head is in the superior strait, or is floating above the superior strait, then we want to be sure if we have R. O. A., or R. O. P., or L. O. A., or L. O. P. After we have determined this, we want to be sure of the part presenting, whether it is occiput, or brow, or face or chin. After these things have been determined, we are in a position to tell whether we have a so-called normal presentation for a delivery.

III. Assuming that the occiput is presenting, either the right anterior or left anterior, or right posterior or left posterior, the patient is then prepared for delivery by having the bowels thoroughly cleansed, that is to say, the whole lower bowel should be thoroughly emptied of all fecal matter, after which the patient is draped and examined vaginally to determine the exact condition of the cervix. I should like to say that I am sure that much of our teaching about vaginal examination is incorrect. We have been taught not to make vaginal examinations. I think the fact that we have been taught this has kept a good deal of information from us which we should have had at our finger tips. When I say this, I do not mean promiscuous examinations but examinations which are made for the purpose of obtaining facts about the patient which will be helpful both to the patient and the attending physician in the delivery. Personally, I believe we can make as many examinations as we feel are necessary, and, if we make them properly and under strictly surgical conditions, there will be no infection following delivery. If we are careless and do not follow the proper technique, then we are foolish and are endangering the lives of our patients. By vaginal examinations we can determine the exact condition of the cervix. By studying these cervices properly we can come within a few minutes of the hour of delivery. A normally delivered patient should be kept quiet and I prefer them to be in bed. I conduct my normal deliveries in the following manner:

1. I do everything possible to assure the patient that she is not in danger and that her baby is in good condition.

2. By the use of morphin I try to eliminate as far as possible the pains the patient experiences in the first stage of labor. After the lower uterine segment has been effaced and the internal os obliterated and the external os opened to the size of a silver dollar, at which time the cervix is very thin, I inject into the rectum two and a half ounces of ether with mineral oil and twenty grains quinine hydrobromide. I have the patient then to lie on her left side until this has been put well up into the sigmoid. This does not interfere with the uterine contractions. In fifteen or twenty minutes the patient is asleep, the uterine contractions prevail and usually in from two to three hours the cervix is completely dilated. After the cervix is completely dilated the patient can be removed to the delivery room; if the analgesia at that time is not sufficient, she can be allowed to inhale ether by the open method. The patient is now thoroughly scrubbed up with green soap and sterile water, after which 2 per cent or 3 per cent of mercurochrome is allowed to run into the vagina. The bladder is thoroughly emptied by use of a catheter. By the use of green soap on gloved hand, the vagina is now gently ironed out. With this process of ironing out, the levator ani muscles and the vaginal wall are thor-

oughly relaxed. When this relaxation is fairly complete, the head comes down on the perineum. As the head appears on the perineum, the skin of the scalp of the baby may be watched closely to keep a check on it; also, the stethoscope may be used to keep a check on the heart sounds. As the head comes down well on the perineum, gentle pressure may be put on the posterior wall of the vagina, thus shortening the duration of the second stage of labor, likewise protecting the perineum. As the brow comes down through the vagina, gentle pressure should be made on the perineum, also on the head of baby to keep the head from advancing too rapidly, thereby protecting the soft parts of mother. As the head slips through the vulva, if the position of baby is L. O. A., the chin should be rotated to the right so as to protect the posterior wall of the vagina. As the chin is delivered the head should be supported and not pulled upon and we should take plenty of time to deliver the shoulders, the trunk and the legs of baby. Many physicians, as the head is delivered, begin to pull on the baby, hooking a finger in the posterior axilla of the baby and pulling it out of the vagina, frequently doing injury to the baby and also irreparable damage to the birth canal. If necessary, one can take ten or fifteen minutes to deliver the baby from this point on, thus saving the soft parts of mother as well as injury to the baby. After baby has been delivered, if it appears not to breathe as it should, it should be left alone and not beaten, nor put into hot and cold water, but let it remain attached to the cord from five to ten minutes. In this way, the baby will get oxygen from the mother and, if the heart is beating in five or ten minutes, it will begin to breathe. If the baby appears too blue, 1/20 gr. alpha lobelin may be injected either into the cord or the buttocks of baby. If baby is uninjured, it will come around all right. Many babies are treated roughly when they do not breathe. This is unnecessary and doctors use up a lot of energy in treating babies in this manner when a very quiet simple easy method of treatment is much better.

After the normal delivery has been completed, an ampule of 15 mms. of obstetrical pituitrin should be given. The advantages of administration of pituitrin at this point are that it protects patient from hemorrhaging, she loses only a minimum amount of blood, and the placenta is expelled more quickly. After the placenta has been expelled, the patient should be thoroughly cleaned, re-draped, legs flexed upon abdomen, cervix inspected, and the vagina thoroughly examined for tears. All tears should be repaired immediately. Strictly surgical technique should be followed all the way through. After the cervix has been repaired, which requires only about three minutes, careful inspection of the vagina will reveal some sort of laceration. Many physicians overlook lacerations over the wall of the vagina; when there is no laceration of the skin, they say they have no lacerations. Careful inspection of the vagina will reveal lacerations posteriorly either in the mid-line or at the right or left of the mid-line. If these lacerations are sutured when discovered, we have a very much better vagina than if they are left alone. DeLee, in his latest book, mentions the fact that all women are lacerated at the time of delivery. A study of my own work makes me believe that that is correct, and I am now routinely examining the cervix and the vagina, and all lacerations are repaired.

In conclusion, I believe we are not using all the knowledge we have in the diagnosis of pregnancy, or in the diagnosis of relationship of baby to mother at the onset of labor. A failure to make a correct diagnosis of the position of baby and presenting part at the onset of labor frequently is the cause of death of baby, and leads to difficulties during the delivery. A correct diagnosis and notation of any abnormalities enables the physician to inform his patient of these abnormalities and also to equip himself for the immediate difficulties in the delivery. It may mean that he will have to call a consultant and have extra help. If it does, do so, for in the long run the physician will not only do better work, but he will be able to keep the good-will and friendship of his patient.

I feel that to allow a mother to go through the so-called natural birth experience without such relief as we may give from suffering is the most inhuman and unkind thing we can do, when we have at our disposal certain drugs which will in great part eliminate these pains and at the same time will not interfere with the physiological and mechanical process of having a baby. By the use of these methods,

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in addition to saving the mother much pain, we also get better relaxation in the vagina, besides being enabled to protect the soft parts. When the patient is through with the normal delivery, after she has re-acted, we will find her prepared for an uneventful period of lactation and puerperium.

Often in our normal delivery we assume we have no lacerations, when, by careful study and inspection, we will find lacerations which should be repaired. Cleanliness and practice of proper technique will eliminate infections and our patients after normal delivery will go through the puerperal period without trouble or discomfort of any consequence; also, our babies will be uninjured and will not thereby be handicapped for proper growth.

HOW MAY WE IMPROVE OUR OBSTETRICAL MORTALITY?*

By GREER BAUGHMAN, M. D., F. A. C. S., Richmond, Va.

There are two ways of handling trouble: One is to try to forget it and to so busy ourselves with other things that trouble is relegated to the background. That method has certain advantages, but, unfortunately, it will not make the trouble entirely disappear. The other way is to talk frankly about it with those who may be able to suggest a plan of cure, and, having worked out a plan, stick to it until trouble has disappeared or until we are compelled to say frankly that the trouble is insurmountable.

Our death rate from childbirth has been handled along the former line until recently. Unfortunately, mortality in childbirth did not decrease. It is high time that we give some real thought to it and that a good working plan for its cure be outlined and vigorously followed.

If we expect our women to have babies, we should be able to guarantee that less than ten in a thousand will die, as they did in 1918. To expect women to continue to become pregnant when they know that one will die in every hundred that deliver is asking too much. 1918 happened to be the year in which the highest death rate in Virginia was recorded within the last fifteen years. The rate has been below seven in a thousand only three times in fourteen years. In 1921 it was 6.9; in 1924, 6.2; in 1927, 6.3 in one thousand.

*Read before the Richmond Academy of Medicine, October 23, 1928.

The number of deliveries in the state is declining. There were 3,374 more women delivered in 1925 than in 1926; of these, 2,262 were white and 1,112 colored. In 1927, there were a few more delivered than in 1926, but less by 3,237 than in 1925.

It would be unfair to attribute the falling off of the birth-rate to the fear of death alone. Undoubtedly, the fear of pain, the fear of morbidity, economic reasons, better jobs for women, better education, spread of birth control literature and many other reasons enter into it. We must face the fact, however, that the number of births is being reduced. Having babies is becoming unpopular, it appears.

Let us analyze the cause of death from the puerperal state in Virginia, to see if it will throw any light upon our problem. We find that puerperal eclampsia, as it is termed in the statistical tables, accounts for about one-third of the deaths, sepsis takes care of a third; and the other third is made of all other things that cause death in the puerperal state. In nine of the fifteen years studied, sepsis killed a greater number than eclampsia; while six other years showed that eclampsia had a greater mortality. From 1913 to 1917 inclusive, sepsis was in the ascendency. In 1918, eclampsia killed eight more than sepsis. In 1919 and 1920, eclampsia was definitely in the lead. In 1921, sepsis led by two. In 1922, eclampsia was fifteen ahead. In 1923 and 1924, sepsis was two ahead. In 1925, eclampsia was twenty-four ahead and in 1926 eclampsia killed ten more than did sepsis. Suddenly in 1927, eclampsia deaths fell to 98—39 less than the deaths from sepsis. This was the lowest rate from eclampsia ever recorded in the State, being twenty-eight less than 1913, which had the lowest death rate from eclampsia up to 1927.

The total death rate for 1927 was 6.3 per thousand. This again was a record, the death rate from the puerperal state being the lowest ever recorded in the State of Virginia.

A brief study of the above statistics would seem to indicate that something rather definite must have happened to reduce the mortality in 1927.

I wish we were sufficiently astute to point out the definite thing that reduced the mortality, particularly in eclampsia. If that were possible, we would be in a fair way to push the declining eclampsia entirely out of the pic-

ture and by so doing reduce our mortality by at least one-third.

We have learned by the study of statistics, as well as our own statistics, that so far as immediate death is concerned, the patient suffering from pre-eclampsia who has had no convulsions will have the same mortality rate as her pregnant sister who has no pre-eclamptic symptoms. The minute they have one convulsion they go into a different class where one in five will die. We know that the only way to have a knowledge of the approach of pre-eclampsia is by prenatal care. If we recognize the impending danger of approaching convulsions, we can by simple treatment prevent them, or, in the event that the case does not improve, we can induce premature labor or abort them. Every doctor in the State knows this simple fact. The real problem is to get pregnant women to make contact with the doctors.

The State of Virginia, mindful of the importance of getting the knowledge of proper prenatal care to the laity has, through its health department conducted a correspondence course for the pregnant women of the State. It has also devoted a department to the instruction of midwives and has eliminated many of the most unworthy.

The activity of the health department of the State, as well as of the health departments of the cities through dispensaries, the medical schools through dispensaries and hospitals, the activities of the county nurses, all of these have undoubtedly helped to reduce the mortality in 1927.

A reduction of the virulence of eclampsia may have had an important bearing upon the situation.

There is one new agent that has entered into the fight for the reduction of puerperal deaths, that must be considered. Dr. J. S. Horsley, while President of the Medical Society of Virginia, appointed a committee for the study of the midwife situation. This committee got to work early in 1927 and immediately enlarged its field of action to include maternal welfare work. They heartened the State health department and outlined a plan for getting the pregnant women in contact with the doctors of their choice.

Dispensaries, clinics and hospitals help a great deal in teaching prenatal care and in reducing mortality.

In 1920 I made a study of the statistics from the outside delivery service of the Medical College of Virginia, and found 2,341 cases with a mortality of 5.1 per thousand. We had 2.9 per thousand of eclamptic deaths but only .85 per thousand of sepsis deaths.

In a recent study of what the dispensary and hospitals of the Medical College were doing for the pregnant women of the city in 1927, I found that the dispensary had 157 white visits and 939 colored visits, 1,096 visits in all. The Memorial Hospital cared for 200 white cases on the wards. The greater number of these were abortions. During the same time, we cared for 210 colored cases in the ward of St. Philip's Hospital. This make a total of 410 charity cases in the two hospitals, while on the outside we handled twenty-two white and 286 colored cases with a total of 308 and a grand total of 718.

During 1927, the city of Richmond reported 3,809 deliveries. Of these 2,466 were white and 1,343 were colored. Our clinic contacted with one white woman in every twenty-four and one in every 2.6 colored delivered in Richmond.

The greater number of the women delivered by the clinic received prenatal care.

Certainly one of the answers to the high death rate from eclampsia is prenatal care. Prenatal care will reduce the incidence of convulsions so greatly that deaths from that cause will be as uncommon as deaths from typhoid.

The problem of reducing sepsis is more complicated.

We believe that we have succeeded in reducing the deaths from sepsis in our own clinic much below that of the State at large because we have given these women a careful physical examination, a careful pelvimetry, have watched the growth of their babies and have planned a long time ahead what method of delivery is most advisable, and have carried out our plans without unnecessary vaginal examinations. We have striven for sterile deliveries. In this we have fallen far short of the ideal, but we are constantly striving.

If we can induce the doctors of the city and of the State to regard prenatal care as of sufficient importance in the prevention of puerperal deaths, the mortality will be reduced much lower than in 1927. In addition, if we can succeed in having every woman in Virginia

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see a doctor at least once during her pregnancy, puerperal deaths will be accidents.

26 *North Laurel Street.*

THE USE OF THE CLINICAL LABORATORY BY THE GENERAL PRACTITIONER.*

By ALEX. F. ROBERTSON, JR., M. D., Staunton, Va.

Since Pasteur's discoveries of fermentation and of the bacterial causes of diseases we have advanced a long way in a relatively few years. So-called clinical pathology has increased in scope with each new discovery, embracing in turn biology, chemistry, immunology and other branches, until it has become a complex study and has resolved itself into one of the specialties of medicine. The general practitioner has promptly adopted this new aid in diagnosis, and not having the time or the training to do the work himself, has it done by laboratories conducted by the state, hospitals, or by private individuals. This has resulted in great help to the physicians and in much benefit to the patients. However, there have been certain disadvantages arising from the use of the laboratory, some through thoughtlessness and others through an incorrect evaluation of the reports. These we shall attempt to discuss and afterward suggest the more useful applications of the laboratory. While I realize that most of what I have to say is so elementary and well known as to seem trite, I have taken this subject because I feel that it is one of practical every day interest to each one of us.

Possibly the greatest disadvantage of the laboratory lies in attaching an undue importance to the reports, "letting the tail wag the dog." If we will only bear in mind that these tests constitute only one link in our diagnostic chain, we shall avoid this error. Again we must be wary of negative reports, for after all it is only the positive reports that are of much value. We may have diptheria with a negative throat culture, or typhoid with a negative blood test, just as we have tuberculosis with a negative sputum. In a case in which we have taken a careful history and made a thorough physical examination and then gotten a laboratory report at variance with our clinical findings, we should try to make the two coincide by carefully going over our case again and having confirmatory tests made. If we still disagree, in the majority of the cases I should prefer the careful history and examination to the laboratory reports.

One very great disadvantage of laboratory methods is that one insensibly becomes lazy. It is so easy to order various tests and study our cases afterwards instead of beforehand. It seems to me that we of this generation, while we know more of medicine from the etiologic and mechanistic standpoints, are far behind our predecessors in the use of our God-given five senses. We use our eyes, but how little we see as compared to the men of the last century! The remedy of this is to study our cases carefully first, and then use the laboratory tests as a check or to confirm our judgment.

We hear much of blood chemistry and to many of us it has little meaning. It has been of great scientific interest and has thrown light in some dark places, but its use is not indicated in the general run of patients. Blood chemistry to some of us means the more commonly used estimations of blood sugar and blood urea. The estimation of the sugar is of importance in diabetes, the urea in nephritis, but it very seldom happens that we need both tests on the same patient, and yet many doctors always order them both. For all practical purposes there is nothing to learn from a blood urea determination which may not be learned from the simpler urinalysis and kidney function tests.

There is no reason why we shouldn't do the simpler tests ourselves. I was much impressed two years ago at the American Medical Association convention by hearing Dr. Henry Christian say that he made his own urinalyses and that every doctor should do so. And it is also true of a great many of the simpler and more useful tests. I feel very strongly that every doctor should have a miscroscope and use it.

It might well be asked what tests are essential and what not, but for the vast majority of cases the simpler tests will suffice. Dr. Cushing has said that 90 per cent of cases can be handled by the general practitioner and the other 10 per cent should be referred to hospital or clinic for study.

The routine urinalysis is the most universally used test and all of us do the chemical part. With a microscope we can readily check up

*Read before the Augusta County Medical Association, May 1, 1929.

on blood, pus, and casts. Let me emphasize here the importance of pyelitis in infants as a cause of unexplained temperature easily explained by a microscopic examination. A simple test not often enough employed is the test for fixation of specific gravity. On a water-free diet the specific gravity of the urine should approach 1.030 by the end of the day. In chronic nephritis it remains low or fixed. The simple estimation of the amount of day and night urine is helpful. As mentioned before, the kidney function, or phenolsulphonephthalein test, is most reliable and shows an impaired kidney earlier than the blood urea estimation does. In the case of edema, the drug should be given intravenously.

The recognition of Vincent's angina is very simple if one has a microscope. By using a platinum loop, one may recover organisms very early—before ulceration—from under the gum margins.

Throat cultures had best be sent to a laboratory but, if the clinical diagnosis is diphtheria, antitoxin should be given at once. Often valuable time is lost in waiting for the laboratory report. Release cultures should be taken after the acute stage is over.

Wassermanns should be done routinely on all chronic cases. Blood cultures and agglutination tests for fevers of over a week's duration should be sent to laboratories. In the case of typhoid it is important to remember that the blood culture is more reliable in the first week when the Widal is usually negative, while at the end of the third week the Widal is positive in about 75 per cent of cases and the culture is usually negative. Any doctor who has a microscope can make his own examinations of smears for gonorrhea.

Blood counts are useful in many conditions, the white and differential being especially useful for acute conditions, and this examination is very easily done with a little practice. We often feel that we can watch an appendix when the leucocytes are low while with a rising count and other acute symptoms we do not dare to wait. A count as high as 20,000 usually means that a gangrenous appendix is not far off. Leucocytosis with fever and a pericardial friction rub may be the determining point in a diagnosis of coronary thrombosis. And there are numerous other examples of the advantages of the blood count that time does not permit us to discuss. The anemias, of course, need a complete blood count.

Examination of sputum for tubercle bacilli, of the gastric test meal, and of the stool for occult blood, parasites, and ova, are important tests which may easily be done in the doctor's office, although these are more time consuming and many will prefer to have them done in laboratories.

Blood sugar estimations are necessary in the treatment of diabetes and for the separation of true diabetics from cases of renal glycosuria. Blood urea is of use in certain cases of nephritis. Cases for these tests should be sent to the laboratory without any breakfast.

There are, of course, other examinations, such as the agglutination tests for Tularemia and Malta fever, carbon dioxide combining power of the blood, etc., which we may rarely need, but the ones outlined above will cover most of our cases.

Lest I be misunderstood, I should like to say that what I have said is not meant to reflect on the very great value of laboratory tests, nor do I blame the laboratory for the pitfalls in its wake. I feel that we, the general practitioners, are to blame because, sometimes we lose sight of the human element in laboratory work, and with the human element there is always the possibility of human error in either technique or interpretation of results. If we remember these things, and that the laboratory is, after all, only one of many steps in arriving at a diagnosis, there will result a coordination of our efforts, a wider use and a greater usefulness of laboratory methods.

Professional Building.

TREATMENT OF BRONCHIAL ASTHMA.*

By TURNER S. SHELTON, M. D., Richmond, Va.

In a condition with as many phases as asthma, it is necessary that the patient be given a thorough study and all underlying causes removed as far as possible whether it be an offending protein or a focus of infection. The treatment of bronchial asthma consists of the following kinds: specific protein, non-specific protein, vaccine, drugs, roentgen-ray, ultra-violet ray, bronchoscopy, operative procedures, psychotherapy, climatic and supportive.

Specific Protein.—The most satisfactory results are obtained in those cases in which you can find a definite sensitiveness to a specific

*Read before the Manchester Medical Society, April 2, 1929.

protein, either by removing the offending protein or by desensitization. All foci of infection should be removed. Probably the most common foci are the sinuses, which should at all times be cleared up. The teeth and tonsils should also be looked after. Walker reports one hundred cases of pollen fever probably cured, with relief of symptoms for at least two years. These patients were treated at weekly intervals for a period of from 13 to 16 weeks prior to the usual onset of symptoms. Many observers insist on pre-seasonal immunization as the method of choice. Vaughan, Conway and others report excellent results in seasonal treatment, after the attack has developed. This method is of value especially as many patients do not report to the physician until symptoms develop. Beckman reports 213 cases of asthma that have been clinically free from symptoms for over two years, observed in a group of 1,074 asthma patients. Of these cured cases, 107 were of the extrinsic type, i. e., the exciting cause was extrinsic, usually some protein; 91 were of the intrinsic type in which the exciting cause was intrinsic, chiefly bacterial and reflex asthma; 9 were unclassified. The most common method of cure was by the elimination from the diet or environment of the particular external substance to which the patient was sensitive. According to Black, good results can be obtained by administration of pollen by mouth. The oral administration of the pollen extract was practically co-seasonal, as it was found that the protecting dose could be reached more quickly by this method and pre-seasonal treatment was not necessary. However, relief was definitely less in the series of cases treated by the oral method than in the series of cases treated by the hypodermic method. In a small percentage of his patients, the pollen by mouth caused nausea and abdominal pain. Cohen reports 400 cases in which he used the following routine. The patient was kept for two weeks in a dust-free room supplied with filtered air removed from contact with all inhalant sensitizing substances. During the stay in the room, routine and special skin tests were made and the effect of heat, cold and other physical factors studied. If the patient's symptoms disappeared in the dust-free room, the symptoms were correlated with some inhalant factor in his environment. The home environment was re-arranged according to the information obtained by this study. The diet was arranged according to information obtained by the history and tests. If the patient failed to get relief by these methods, attempts at specific desensitization with the bacteria to which he was sensitive were tried.

Non-Specific Protein.—Non-specific protein treatment seems to give but little relief. However, Vallery-Radot and Giroud claim better results with non-specific desensitization with peptone than with the methods of pollen desensitization generally used in America.

Vaccine.—In practically all cases of long standing with secondary infection, vaccine therapy with autogenous or stock vaccine is indicated. Sutherland claims that stock vaccine is as effective if not more so than autogenous vaccines.

Drugs.—Many drugs have been recommended in the treatment of asthma. Potassium iodide probably is the most commonly used. It is of considerable value in that it thins the bronchial secretions, enabling the otherwise thick tenacious sputum to be much more easily discharged. Adrenalin chloride gives striking relief during an attack but, if given in large doses over long periods of time, it is likely to cause a poor physical condition with tremor and weakness. Though ephedrine may not give as quick relief as adrenalin, its effect is more lasting. One advantage it has over adrenalin is that it may be administered by mouth. If the patient cannot use hypodermic medication himself and has nothing to take orally, he has a tendency to rely upon patent medicine. About 10 per cent of patients taking it over long periods of time develop tremors, palpitation and insomnia. Beckman reports treatment of 17 cases of late summer fever with nitrohydrochloric acid given by mouth. In all cases, practically complete freedom from symptoms was obtained by starting treatment with the acid at once on the appearance of the first premonitory symptoms and continuing its use throughout the season. In patients showing a blood calcium below normal, calcium chloride, given in 15 grain doses 3 times a day, at times gives marked relief. Chopra reports a series of 61 cases treated with saussurea lappa (kuth root). The drug was found to be excellent for controlling asthmatic attacks. It has a depressing effect on vagal

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tone, relaxing the involuntary muscle fibre of the bronchioles. It also relieves the congestion of the bronchial mucosa by its marked expectorant action. Though he used the saussurea lappa alone when the drug is being administered to cut short a paroxysm, he prefers to prescribe the following mixture when administration is to be continued for some time to prevent further recurrence of the attacks.

Potassium Iodide	Gr. v to x
Tincture of Belladonna	M iij to v
Borax	Gr. ij
Extract S. Lappa Liq.	Drs. ½ to 2
Sp. Chloroform	M x
Aqua.	Oz. 1

The drug has no cumulative action so that it can be continued for long periods without harm, and it does not cause tolerance so that the dose has to be increased. The above mixture can be given 3 or 4 times a day and gives prompt relief.

Roentgen-Ray. — Numerous contributions have been made to the foreign literature of Roentgen-ray therapy. Vallery-Radot and others report 64 cases of asthma and spasmodic coryza treated by Roentgen-ray. Thirty-one of these cases had asthma alone, 8 spasmodic coryza alone, and 25 both conditions. Some patients in addition had attacks of spasmodic cough, migrain and urticaria. Most of these patients had been suffering over a period of several years and had tried various methods of treatment without relief. In some cases the hilus of the lung was irradiated, in others the spleen, in others both areas. Of 64 cases 19, or 30 per cent had complete relief from symptoms, 16, or 25 per cent, were very definitely improved, in 29 cases, or 45 per cent, the treatment failed. Of 12 cases in which the hilus region alone was irradiated, there were 2 relieved of symptoms, 6 improved, and 4 failures. Of 26 cases treated by irradiation of the spleen, 8 were completely relieved, 7 improved, 11 failures. Of 26 cases in which both areas were treated there were 9 completely relieved, 3 improved and 14 failures. Waldbott treated 81 cases of asthma and associated allergic conditions with small doses of Roentgen-ray over the spleen. Of the total series, 21 became symptom-free, 25 were temporarily relieved and 25 did not respond to treatment. There were a larger percentage of failures among adults than among children. The best results were obtained in children less than 4 years of age and in cases with a beginning allergic condition manifested by allergic bronchitis. Better results were obtained in cases of allergic asthma sensitive to bacteria than among those sensitive to food pollen and emanation. Of a total of 169 exposures, 39 were followed by reaction. Better results were obtained in patients showing these reactions. Gilbert reports 64 cases of asthma and spasmodic coryza treated by Roentgen-ray applied over the hilus of the spleen. In a number of these cases both the thorax and spleen were irradiated. Of the 64 cases, 19 were entirely relieved of symptoms, 16 were greatly improved. In the remainder, some improvement was noted.

Ultra-Violet Ray.—Wilmer reports the treatment of various types of asthma by irradiation with the infra-red and ultra-violet rays. The distance of the lamp from the body is gradually diminished and the time of exposure gradually increased. From the results obtained he concludes that infra-red and ultra-violet rays should be used in all cases of asthma due to bacterial sensitivity as an adjunct to bacterial therapy; in all children with asthma, of whatever type, who are definitely anemic or show evidence of rickets; in all patients whose living conditions are poor, with no opportunity for sunlight; in adults with a dry cough and extremely tenacious fibrous sputum. Of 20 children 2 to 10 years of age treated by rays, 14 were relieved and 3 improved. Of 12 older children and young adults 10 to 21 years of age, 6 were relieved and 2 improved. Of 50 adults 30 were relieved and 7 improved. In the cases designated as relieved, patients had been free from asthma for over six months. Most of these patients had been treated by other methods without relief.

Bronchosocopy.—In a bronchoscopic examination of 21 cases of asthma by Lukens, four groups could be distinguished on the basis of findings: (a) those with chronic suppurative tracheobronchitis; (b) those with chronic catarrhal tracheobronchitis; (c) those with cyanotic mucosa without suppuration; (d) those with urticarial patches. Most of the patients belonged to group a. In addition to the general medical treatment, these patients were treated by bronchoscopic removal of the pus and abnormal secretions from the trachea and

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bronchi. In group d cases, 10 per cent argyrol was used to touch up the urticarial patches and in group b cases, to swab over the intensely inflamed areas. All but seven of these cases were definitely improved and some appeared to have been cured. Group a patients experienced great relief within an hour after treatment and could prevent attacks by applying for treatment in time. Lukens believes that bronchoscopic drainage and treatment are a valuable aid in cases of asthma in which there is a definite pathology of the trachea and bronchi.

Operative.—Leriche and Fontaine report two cases of bronchial asthma treated by resection of the stellate ganglion on the left side. They conclude that while this operation has given excellent and permanent results in some cases, it is without effect in others. In one of their cases, section of the pneumogastric entirely relieved asthmatic attacks.

Psychotherapy.—Fock reports five illustrative cases of asthma in which the onset of symptoms could be referred to some nervous or mental strain or some psychic trauma, in which complete cure was obtained by psychotherapy alone. Treatment consisted in obtaining periods of complete rest and relaxation under the influence of suggestion or preferably under hypnosis. This method, the author states, is not successful in all cases, even those of apparent psychic origin, but some cases respond to psychotherapy in which all other methods have failed. Moos reports sixteen severe cases and a number of milder cases treated by psychotherapy. At the end of the treatment there was no evidence of bronchitis and emphysema had entirely or almost entirely disappeared, except in two cases, and patients could be exposed to the various substances that had previously caused attack without recurrence.

Climatic.—Change of climate may relieve certain sensitive types of patients by moving to a locality where the particular pollens to which they are sensitive are not prevalent. In the same way a patient may move from close proximity to a stable to a place more distant.

Supportive.—Those cases which do not promptly respond to specific treatment or in which no disturbing element can be found require supportive treatment such as: rest, proper diet, restricted exercise, fresh air and hygienic measures.

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3018 *Semmes Avenue.*

RABIES—A CASE REPORT.*

By I. KAY REDD, M. D., Atlee, Va.

V. L. B., age six years, was brought to my office at 1:30 P. M., March 6, 1929, with a history of having been bitten about ten minutes before, by a dog belonging to the family.

On examination, there was a laceration of the upper lip two inches in length, beginning just above the lip margin at the center and extending well beyond the corner of the mouth. One-quarter inch above this was a second laceration, parallel to the first, but only about half as long, one inch. These two connected below the left nostril by a third perpendicular laceration, all three being completely through the lip, making a flap which could be pulled out. Apparently the child

*Read before a Staff Meeting of the McGuire Clinic, Richmond, Va., April 16, 1929.

screamed when attacked and the dog caught her in the open mouth. This wound was bleeding freely. There were two lacerations across the bridge of the nose, one inch in length and about half an inch apart, a short tear in the lower eyelid near the inner canthus, four puncture wounds in the right cheek and one puncture in the entrance of the right nostril.

The wounds were cleaned with green soap and water, then with 1-1000 bichloride solution; all ragged tissues were cut away, and the parts were again bathed in bichloride solution. The lip wounds were closed with deep sutures of chromic catgut inside the mouth. The skin was sutured with fine dermal. The child was given 1,500 units of antitetanic serum.

On inquiry concerning the dog, Mr. B., the child's father, said it belonged to his father, who lives on an adjoining farm. It was not a very amiable animal and he said the child had probably disturbed it while it was eating. No change in its attitude or habits had been observed by any member of the family. The little girl was certain that the dog was not eating but that it was lying down by the house. Mr. B. was advised to kill the dog and submit the head to the State Board of Health for examination, which he did that afternoon. The Laboratory reported Negri bodies in the brain and Pasteur treatment was started, the first dose being given just five hours after the accident occurred. Hot dressings of boric acid solution were applied to the face for five days and then discontinued, there being no evidence of pyogenic infection. The mouth was kept clean with boric acid solution. Stitches were removed on the eighth day with very little scar, considering the extent of the injury.

Pasteur treatment was kept up regularly through the twenty-one doses. There were no local reactions. The child was bright and cheerful, her appetite good, and during the time developed quite an affection for me. She did not anticipate the hypodermics with any pleasure, but submitted without much protest. She regretted the last treatment because I would not come to see her any more.

On March 29th, two days after the last treatment and twenty-three days after the injury, I saw her and her attitude was entirely changed. Her mother stated that early in the afternoon she became nauseated and vomited, complained of headache and pain in the back of her neck. She was slightly constipated. When I entered the room she began crying and appeared to be frightened. She crawled over to the side of the bed next to the wall and pushed her face downward between the mattress and wall as far as she could. It was only after much persuasion and threats from her parents that she agreed to even be touched, and then she was terribly frightened. Her temperature by mouth was 100.4° F. There was an area of induration and tenderness in the scar on her lip. She cried out with pain at times but was unable to locate it.

She slept very little that night, being fretful and irritable. She vomited several times, and retained some nourishment. Pain in the head and neck continued. The next morning her condition was unchanged and she was brought to St. Luke's Hospital, arriving about noon. She said she was hungry and asked for some sliced meat but ate very little. Her axillary temperature at 8 P. M. was 101° F. Her condition remained unchanged, and the second night was about the same as first night. Her appearance at 9 o'clock next morning was described by a consultant as "that of a little girl convalescing from an illness, and about ready to leave the hospital." Axillary temperature at 8 A. M. was 102.4° F. She complained of dysphagia shortly afterward and by noon she was unable to swallow liquids. At 1 P. M. her appearance was that of an extremely ill child; there were periods of delirium and hallucinations, and she was very excited and anxious to get up and go. There was also a left diplopia, a convergent strabismus and an endophthalmus. Axillary temperature at this time was 102.4° F. These symptoms continued with increasing excitement. At 4 P. M., her axillary temperature was 105.4° F., pulse 134 and respiration 40. She died at 4:30 P. M. in a respiratory spasm—just fifty hours after the first symptom developed.

It is of interest to note that B.'s dog fought a neighbor's dog several nights before he bit the child. This second dog developed rabies in fifteen days. The owner became contaminated with its saliva and is taking treatment. Twenty-two days after the dog was killed, a cow owned by Mr. B. developed jaw drop and was unable to swallow. Four members of the family and two neighbors explored her mouth and throat with their bare hands for an obstruction. The next day she developed typical rabies of the furious type and was killed. These six men are taking vaccine. From the rapidity in which symptoms developed in the

little girl and these animals, the infection must be highly virulent.

Although we know that rabies cases are 100 per cent fatal, in severe injuries or puncture wounds about the face and neck, especially in children, the prognosis is very grave, because the disease reaches the brain before immunity is established.

We ask ourselves what changes in treatment might have saved this child. Time was not a factor, as treatment was started very early. Cauterization of the wound is advised. An excision of the lip wound and cauterization of the lacerations over the nose and the puncture wounds of the cheek and nostril would have left a dreadfully disfigured face and still the eyelid to deal with. Although puncture wounds are considered the most dangerous, the disease in this case evidently developed from the lip, if induration and tenderness in the scar mean anything. Some authorities advise giving two doses of the virus a day for the first few days in severe injuries. Because of this child's age, six years, we felt that the full adult dose once daily furnished the immunity as rapidly as she could absorb it. Intravenous injections were considered and rejected because of her youth, plumpness and the daily repetition.

A RURAL INTERNSHIP.*

By DAVID B. STUART, M. D., Dublin, Va.

For the past five years it has been my allotment, at the hands of fate, to dwell in a rural district that, in my judgment, has no superior to be found throughout the breadth of the land. Packed into its vales and crowded on its hills are peopled some of the finest specimens of humanity that it has ever been my good fortune to learn, to like and to love. Many of the friendships that I have made are with people of a much higher intellectual status than is found in an average rural community of similar scope. I say this because, if some of the remarks that follow seem to border on the extreme, it is to remind you that they would only be exaggerated for a community less fortunately endowed.

If my observations seem caustic, my opinions egotistical, or my reasoning faulty, then please attribute the failing to one of two causes—first, that I am anxious to be earnest and true, and, second, that they are a result of a most intimate personal experience. One cannot be associated with the same daily routine of life for five years without forming definite ideas, likes and dislikes to his mode of existence, that would be so fixed that it would be extremely difficult for anyone less familiar with the same to dissuade him from any of his opinions.

It is my object in these few words to address three classes of physicians, and then only in general terms, because, if I really opened my heart to you on this subject, the product would be volumes and not a mere pamphlet. The first class is composed of that large number of men who are likewise located in general rural practice. To this group I have nothing to say except that I believe they can endorse the principle, at least, of all I have to say.

The second class is that smaller group of young men who have just finished one or more years in modern hospitals, and who are looking over the general situation, trying to decide just where to cast their anchor for life. To this group I have to say the following: If you are well pleased with your mental equipment and it would wreck your self-conceit to take a fall, then stay out of rural practice. If you cannot make a diagnosis without the various laboratory and mechanical means, if you cannot recommend treatment without the assistance of up-to-the-minute equipment, or if you cannot reach a decision without the aid of a superior, then stay away from the country. If, on the other hand, you desire experience that will render your judgment more mature, instill deep into the very fibre of your existence the art of self-reliance, inculcate into your being the severe task of rigid self-appraisal, and to be able to sum these up into a broadened scope of sociological and psychological attributes in your relationship with your fellowman, then, my friend, my advice to you is to come to the country. It will receive you with open arms and, at the end of your term, the length of which you can determine yourself, it will discharge you back into a wider world, also of your own choice. But I daresay it will leave the mark on you that is always found on a man who has had an experience that has given him cause for minutes of happiness, hours of sadness and days of self-inspecting thought.

The last group is made up of that larger number who can best be termed as urban physicians, a large proportion of which practice

*Read before the Southwestern Virginia Medical Society, at Pulaski, Va., March 25-26, 1929.

a specialty. Consequently, this group see a multitude of patients who are referred to them by the less fortunate rural physician for various ailments and sometimes for sheer diagnosis. To these men I have little to say in words, but a great deal in meaning. I admonish you to be tolerant. Remember always that the patient you see is one that has, from one reason or another, caused the referring physician a good deal of concern. If he is referred for diagnosis, do not dismiss him lightly for it may have taken months to persuade that patient to consult you. If he is referred for corroboration of diagnosis, and you cannot agree, be merciful and remember that the referring physician established a diagnosis solely by sheer brain power, and without the marked advantages at your disposal. I have lots of patients to come back to my office and tell me that they would never advise a friend to go to the man I advised them to consult, because they felt as if the effort was wasted, thinking that only scant attention was paid them. They are of an intelligent type, endowed with that rare faculty so prevalent in residents of rural districts that enables them to "size a man up" and to do it ofttimes with uncanny accuracy. Keep ever in mind that the patient referred to you is one that has puzzled the man that sent the case in, because if he considered himself thoroughly competent to handle it, you would never see it. And if you receive a case on which the country doctor has, in your opinion, made an apparent "bust," such as bringing in a ruptured appendix, think twice before you condemn him, *unless he makes it a habit.* It may have been a call far off of a good road, a family financially unable to receive hospital attention and delayed on that account, it may have been an old condition before a physician was called in, or it may have been one of those indefinite, tricky conditions that the rural practitioner appears to encounter so often. And, lastly, do not fail to recognize that in a small community everybody knows everybody else, they fraternize, work shoulder to shoulder, and when in trouble they offer sympathy, services and kind wishes to each other instantly. Therefore, they are intensely interested in the welfare of one of their number who has been less fortunate and lies ill in a near or distant hospital. It is a source of frequent embarrassment to have friends and relatives to inquire of the local physician as to their progress, and it may have been days or weeks since he has heard directly from the man that the patient was referred to. It will take only a few more minutes of your time to send to the country man a record of all examinations or operations, and then to keep him posted every day or so as to the progress they are making. It serves the twofold purpose of keeping him informed at all times, and, second, enables him to keep a system of records that, queer as it may seem, quite a few of the "hick" doctors like to keep.

To deviate along a little different line of thought, it is interesting to me to consider the following experience: I received my internship in a small private institution that, to my mind, except for the scale, compared very favorably with the larger hospitals, and gave more intimate contact with the physicians in charge. In this I became very closely drawn to several young men who, when they finished, each chose a separate path of procedure. Some went to larger hospitals, some to specialities and I came directly to general rural practice. It has been a pleasure a few times in the past five years to have had an occasional hour of intimate exchange of experiences, and it has been my delight to find that my experience has been the broader. It is true theirs has been much more intense, and they are better equipped to handle specific cases, but in every instance they have as yet to establish self-confidence, and they have learned absolutely nothing about the psychology of human nature from actual contact.

As to the multitudinous problems that a man doing rural practice obviously encounters, I am saying nothing, because you either know of them, or you are not capable of imagining them, for one has to enact an experience before he is capable of reproducing a mental picture of a similar circumstance. In order to sum up the attitude of the man who is facing the problem of rural practice, suffice it to say that he is constantly endeavoring to find a little different way to accomplish an end. In other words, he is seldom able to avail himself of methods of diagnosis or therapeutics that he was trained to use. It is an everyday occurrence that he has to substitute, to improvise, to makeshift, and, in short, to do the very best that he can under the circumstances. If he succeeds, he knows it and it cheers him, spurs him on to other efforts; if he fails, no one need tell him for, with that rare insight inculcated into his soul, he is thoroughly able

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to account for his own shortcomings. He soon loses all egotism, all evidences of false pretenses, and becomes more imbued each day to endeavor to render the very best he has in him, if he means to be true to himself and to his fellowman.

I do not believe you can show me a physician who has practiced medicine in a rural district for five years or longer who will tell me, of the vast knowledge that he now possesses, that he gained the major portion of it in any school or hospital. No doubt he considered himself a very fair doctor when he essayed forth into the realms of country practice, but I will wager that only a few months caused a very thorough revision of the estimate, if he was fair to himself. Not so the man who locates in a city, because, if he strikes a snag, he has an abundance of efficient, experienced men whom he can rely on early in the progress of a case. He is able to limit his work narrowly even if he undertakes general practice. But the man out in the country, who has to depend on his own efforts, has to settle his problems alone and ofttimes battle the Grim Reaper unprepared, unassisted and underpaid.

I hope I have been fair in the statements made in this paper. I have tried to state the case without malice, for, while I have slaved, I have really enjoyed the last five years, and am grateful for the experience gained. I would not care to go through again all of the harassing moments that have passed, but I would not exchange a similar term in the best hospital in America for the intrinsic value of the knowledge gained in that great institution, Rural Practice! It is closely allied with that great College of Opportunity and that still larger University of Hard-Knocks. I hope to graduate some day, and to assay forth into a wider world, but I shall never forget, and will always respect the wide open spaces found in any rural community where a man is "his own jury, his own judge, and, if need be, by Divine right, his own executioner."

SURGERY OF THE GALL-BLADDER.*

By HERBERT C. JONES, M. D., Petersburg, Va.

Successful surgery of the gall-bladder depends upon several factors: correct diagnosis, proper decision as to the time to operate, a wise selection of the type of operation, and an average amount of skill and technique. Of the foregoing factors, the first is by far the most important, and we might go even further and say that the end results of surgery of the gall-bladder, as in other types of surgery, will be in a definite proportion to the correctness of the diagnosis. Exploratory operations are decreasing in numbers, and, as a result, operations are less shocking, performed in a shorter time, and there are fewer failures. Lives will be saved, unnecessary operations will be abandoned, and surgeons will be saved the embarrassment which always occurs when a patient comes back and states his old pain has returned. One cannot over-emphasize the fact that every operation on the gall-bladder or its ducts should be well founded, and one should utilize every resource at his command to arrive at the safe and proper plan of action.

The commonest pathology of the gall-bladder and its ducts is bacterial in origin. Probably 99 per cent of its disease starts in this manner. We cannot discuss in this paper as to whether this infection is by way of the blood stream, lymphatic channels, or ascends from the duodenum through the common duct. Once the infection invades the bile ducts and gall-bladder, one must decide as to whether this infection will take care of itself or can be made to take care of itself without leaving permanent damage. The hepatic and common ducts are necessary to life in that they form a passageway for bile from the liver to the duodenum. The gall-bladder, however, is not necessary to life, and when diseased not only offers a constant focus of infection but also is a favorable seat for the development of cancer. A diseased gall-bladder undermines health by disturbing digestion and is often the cause of inflammations of the liver and pancreas. Generally speaking, then, a diseased gall-bladder should be removed unless there are very definite contra-indications. One might draw as an analogy the modern conception of the tonsil. Tonsils are removed when they appear diseased, or when they are thought to be the focus for some disease elsewhere in the body, and, further, when there is a definite history of repeated attacks of tonsillitis. Tonsils are not removed in the face of acute infection. Abscesses of the tonsils are incised and drained and the tonsil removed later. Likewise, gall-bladders are removed when they are diseased and are not functioning properly. Thanks to Dr. Graham in his development of

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the gall-bladder function test, one can now tell with 90 per cent certainty as to whether the gall-bladder is diseased. Tonsils are not removed during attacks of acute tonsillitis. Similarly, in acute cholecystitis one does not operate unless he is forced to. Under morphine, rest and an ice-bag, the condition will subside and removal can be accomplished with less risk because of the diminished danger of infection, the diminished likelihood of troublesome hemorrhage, and the lessened danger of injury to important structures. As in abscess of the tonsil, where drainage is the treatment, so, likewise, in abscess or empyema of the gall-bladder, one is forced to drain. The gall-bladder is not removed because of the increased danger to the patient. Border-line cases here often tax the ingenuity of the best surgeons and the matter of removal can only be decided on the basis of judgment.

Surgery of the hepatic and common ducts is somewhat different. These ducts are necessary to life and surgery here is more of a plastic nature. Every operation on them has for its purpose the establishment of a drainage tract for bile, whether the obstruction be due to pus, stone, or pressure from without, such as an enlarged lymph gland or malignancy. A surgeon often faces the problem of deciding whether or not to open the common duct. Generally speaking, if there has been no history of jaundice and if no stone can be palpated in the common duct, this duct should not be opened even if at exploration it is found to be dilated. If, however, there has been a definite history of jaundice and the common duct is found to be markedly dilated, even though a stone cannot be felt, the duct should be opened and explored. It is probably better not to open the common duct and remove the gall-bladder at the same operation, because should the common duct become obstructed following the choledochostomy, the gall-bladder would still be available for anastomosis to enter the stomach or duodenum, as may be indicated. Gall-bladder drainage is probably a better operation than removal after the common duct has been opened.

It is better before beginning the choledochostomy to estimate accurately the number of stones in the duct, as extensive exploring should not be done after the duct is opened. The common duct is grasped with two Allis forceps just below the entrance of the cystic duct and a longitudinal incision is made; a common duct scoop is then passsed gently into the duct and stones and debris removed. With little force the scoop should be passed into the duodenum to be sure the ampulla is not obstructed. A small rubber catheter is then passed upward into the common duct and the edges sutured around the catheter. If a cholecystostomy is not done at the same time, this tube should be passed up to the common hepatic duct.

The tube usually drains bile about 10 days and slips out itself. A soft rubber dam drain should be left down to the opening in the duct.

Patients with jaundice present a definite problem. The indicated procedure will depend upon the determination of the cause. The etiology of jaundice has been classified somewhat as follows: Fifty per cent—stone in the common duct; twenty per cent—catarrhal jaundice of the young; fifteen per cent—cancer of the liver, gall-bladder, ducts or pancreas; eight per cent—cirrhosis of liver and hemolytic jaundice; seven per cent—cholecystitis associated with hepatitis and pancreatitis. It is better as a general rule not to operate upon patients while they are jaundiced. If there has been a history of intermittent jaundice, the more desirable procedure is to wait for an interval. Many cases, however, are seen with a history of persistent jaundice, either with or without pain. Walters has done much to simplify the problems presented by this class of patients. He found that the high mortality following operation was due in a large percentage of cases to post-operative bleeding. In a careful study of the pre-operative records of those that had bled to death following operation, he found that their coagulation had been more than nine minutes. He then carried out a series of experiments, injecting calcium chloride intravenously to determine if he could by this means reduce the coagulation time. This method proved so successful that he now used it as a routine preoperative measure in all jaundiced patients who have coagulation time of more than nine minutes. Five c.c. of 10 per cent calcium chloride is given intravenously once a day for three days and the reduction in coagulation time noted. Usually it drops from above nine minutes to from four to seven minutes.

Walters also found that the fatal cases following operation had been suffering from

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hepatic and renal insufficiency, so he included glucose per rectum (1000 c.c. of a 3 per cent solution in twenty-four hours) and forced fluids in his pre-operative treatment. In this manner practically every case of persistent jaundice can be made ready for operation.

Surgery of the bile ducts resolves itself as a rule into procedures to relieve obstruction to the outflow of bile. Proper pre-operative consideration will save this class of patients much unnecessary manipulation and investigation, and, as a result, complications will be less, with consequent saving of lives. One should bear in mind, especially in this type of case where obstruction to the common duct and marked disease of the liver is evident, that cholecystography or the Graham gall-bladder function test is of little or no value, and one must rely upon a careful history and physical examination along with accurate laboratory work to make a correct diagnosis.

The question of malignancy as a cause of jaundice is an interesting problem. One should always bear it in mind, especially when the jaundice is painless and the patient is near the cancer age. Probably in suspected cases it would be wise to make an X-ray of the chest and spine to see whether any evidence of metastasis can be found. Occasionally a patient in this way will be saved an operation which will be of no value. Surgery of malignancy of the gall-bladder and its ducts probably will always be very unsatisfactory. Occasionally an early malignancy will be found in a gall-bladder after it has been removed and in this way the lives of some cases will be saved. Where the malignancy is blocking the common duct, palliative measures, such as forming an anastomosis between the gall-bladder and either the stomach or duodenum will often lengthen life and relieve suffering. This procedure should be carried out in well selected cases.

An operation of this type might also be indicated in cases of obstruction due to an enlarged lymph gland obstructing the common duct which cannot be safely removed.

The occurrence of malignancy of the gall-bladder and its ducts should become less as surgery improves and diseased bladders are removed earlier. The writer has seen during the past year three cases of malignancy involving these structures. In all three cases a very definite history of gall-bladder disease extending over a period of from eight to ten years was obtained. I am sure, had these cases been operated on earlier in their disease, they would have been prevented horrible deaths. Experience with these cases, then, forces one to see the necessity of early operation in diseases of the gall-bladder.

One cannot consider this subject without saying a word about gall-stones. Gall-stones are the evidence of an infected gall-bladder. They are evidence of stagnation of bile in the presence of bacterial infection. The most common type is a cholesterin stone with calcium and bilirubin deposits. While most gall-stones form in the gall-bladder, one should bear in mind that they may form in the hepatic ducts or liver. If gall-stones are known to be present, the sooner the operation is performed the better. To prolong medical treatment is to invite complications, which may be the cause of an incomplete recovery after operation. In addition, the extent of the complications may render the patient unfit for the operation of choice, and one may be forced to do a gall-bladder drainage which may have to be followed by a removal of the gall-bladder later.

Adhesions between the gall-bladder and duodenum or stomach as a cause of symptoms is being called to the attention of the surgeon more and more each day. Fortunately these adhesions may be surmised before operation. A careful history, with accurate X-ray studies of the gall-bladder and upper gastro-intestinal tract, will lead one invariably to the diagnosis. These adhesions are evidence of infection in either the gall-bladder or duodenum. Their presence in the face of symptoms is an indication for operation. Usually the adhesions must be severed and the gall-bladder removed. The covering over of all raw surfaces to prevent a recurrence of adhesions is a very necessary part of the operation.

Whether a cholecystectomy or cholecystotomy should be the operation of choice in diseases of the gall-bladder has long been a mooted question. After years of argument, *pro* and *con*, certain very definite indications for each type of operation have been developed. Of course there will be border-line cases where the question will have to be decided by the surgeon's own judgment, but, generally speaking, a diseased gall-bladder should be removed wherever it can be removed safely without too

much risk to the patient and there is no indication that the gall-bladder may be later necessary for anastomosis to maintain a passage way for bile to escape from the liver. It is probably best never to remove a gall-bladder in the face of acute infection. Palliative measures usually cause these acute infections to subside; however, if the acute infections show no tendency to subside, in order to save the life of a patient, a cholecystotomy should be performed. It should be remembered that perforation of the gall-bladder rarely occurs. Large clinics reporting series of acute cases indicate that rupture occurs in less than one per cent of cases. Cholecystotomy is also indicated in patients who are poor risks, or where the added burden of removal would add too much load.

As stated before, two other indications for the drainage operation are where the common duct must be opened at the same time, or where it is evident the gall-bladder may be necessary as a means of anastomosis later.

One must mention something of the problem that often faces a surgeon when he finds a healthy looking gall-bladder in a patient who is having symptoms which appear to be coming from the gall-bladder. If in this type of case a thorough gastro-intestinal study of the stomach and duodenum has been made and the several gall-bladder function tests indicate that it is not functioning properly, the gall-bladder should be removed. With proper routine study the number of this type of cases will become less.

Of all the complications which occur after operations on the bile ducts and gall-bladder, bleeding, especially in jaundiced cases, is most troublesome. Blood transfusion and hemostatic serums here may be of great value. A few cases will be seen where symptoms persist after operation. In some of these stones were not removed at the time of operation, and in others the ducts were so thickened before operation was performed that they interfered with drainage. Should a biliary fistula persist, one must conclude that injury to the ducts occurred at the time of operation or that there is an unremoved stone in the common duct. In cases where cholecystostomy had been performed and symptoms recur, there may be a recurrence of gall-stones and the gall-bladder may have to be removed at a later date.

Gall-bladder surgery is very satisfactory. Clark Brooks, in a recent article in the *American Journal of Surgery*, reported 830 gall-bladder operations with 23 deaths or a mortality rate of 2.77 per cent. Other large clinics are reporting great numbers of cases with similar success.

The recent progress of gall-bladder surgery has been due to several factors: First, improvement in diagnosis; second, improved judgment; third, improved technique; and, last, but not least, a closer cooperation between the surgeon and the internist has developed.

The development of the Graham gall-bladder function test has been a great boon to surgery of this organ. So often patients come in with an indefinite history and it is in this type of case that an X-ray study of the gall-bladder is so helpful. Most of the large clinics are checking up their positive tests with surgery and finding about ninety per cent disease. Before the development of this aid, gall-bladder disease could be diagnosed with some degree of certainty in only about seventy per cent of cases, and it is indeed a happy feeling to know now that disease can be proven nine times out of ten before operation. It should be remembered that the test is a function test and one may have gall-stones and still have a normally functioning gall-bladder. Also that the test is of little value in jaundiced cases because of their obstructive nature. The test as it is now developed is safe and it should be used in all suspicious cases.

The closer cooperation between the internist and surgeon has been a big factor in this as well as all other types of surgery. A proper outline of pre-operative treatment and better judgment as to when to operate, along with as thorough study of other vital organs, can be best carried out with the aid of a competent internist. Then, too, these cases need careful post-operative treatment, especially with regard to diet, and here again the medical man has played a big part in the success of this type of surgery.

Time will not permit much of discussion of technique; however, the development of the gas anaesthesias has added increased safety to this as well as all other types of surgery.

Modern operating room tables allowing a favorable operative position have been a big help. Better lighting has improved visualiza-

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tion and made operation much simpler. The covering over of raw surfaces for the prevention of adhesions has lessened the number of poor results, and, last, but not least, a more thorough understanding of the anatomy of the ducts has greatly diminished the number of duct injuries, which at one time were so embarrassing to the surgeon.

MANAGEMENT OF PULMONARY TUBERCULOSIS.

By FRED F. OAST, M. D., Roanoke, Va.

Before discussing the actual management or treatment of pulmonary tuberculosis, I would like to call attention to the usual onset of this condition. We have all been impressed from time to time with the insidious onset of tuberculosis, and the origin of the disease is generally considered as apical. In a large number of cases this is true. A patient may have a small apical focus which may do one of several things: 1—It may become completely healed and apparently never affect the health of the patient. In this case the patient will probably have a scar in the apex which may lead to a variation in the physical examination. 2—It may progress to a fair degree of involvement without apparent symptoms; then it remains more or less quiescent at this stage for a considerable length of time, finally to resume a more progressive course with definite symptoms. 3—The case may from the first continue a rather progressive course with the usual insidious symptom becoming more and more pronounced until a definite break occurs. The above conditions usually respond to treatment, but require considerable time to become arrested.

The other common onset of pulmonary tuberculosis is a subapical and a more acute condition. The patient has apparently been well, and then rather suddenly develops fever—often 101 or 102—cough with expectoration, night sweats, hemorrhages, and rapid loss of weight. On examination the patient has a rather diffuse and extensive involvement and the apex may be clear. Cavitation may occur early and the disease is very progressive. Often this type of tuberculosis will respond nicely to immediate rest, and then at times it seems that nothing will deter it from its rapidly fatal course.

As to the management in any case of active tuberculosis, the first step is to put the patient at complete rest for a period of four to eight weeks. After studying his reaction to rest treatment over this period, it then becomes necessary to decide upon the follow-up treatment. Some few years back rest treatment was considered about all that could be done for tuberculosis. Today we have artificial pneumothorax, phrenicotomy, cauterization of adhesions, and thoracoplasty at our disposal, and each has its place. In some instances it is important to decide early as to the manner of treatment.

If the patient is doing well with rest treatment alone, the tendency is at present to let this be the choice of treatment, especially if the involvement is bilateral to any extent. In so doing, he is kept at rest until all activity has ceased and improvement is apparent. At this point it is quite necessary to gradually increase the exercise of this patient. I would like to stress this point—that once a patient has begun actual improvement and no active symptoms are present, we have then a definite indication for restricted exercise, which, if increased gradually within the limits of the patient's strength, will tend to increase the patient's resistance, as well as better his mental attitude, and make for an earlier recovery. Occasionally this is neglected and the patient kept at complete rest much too long. During the above period of rest and convalescence, a well balanced diet, fresh air and a favorable environment are essential to the best results. Heliotherapy is being used to some extent, but the trend at present is against this form of treatment in pulmonary tuberculosis.

As to the surgical procedures, the results are not quite so rapid as in most other surgical conditions. For a variable length of time the treatment is a combined surgical and rest treatment. Artificial pneumothorax is usually the first recourse when surgery is considered. The ideal case for pneumothorax is that of a unilateral involvement, most often of the chronic fibroid or ulcerative type. The semi-acute exudative cases also do well sometimes when gradually compressed. If contemplating artificial pneumothorax, the decision should be made as soon as possible, as the longer it is put off, the more likely will adhesions interfere. Arti cial pneumothorax is to be considered in (1)—Any unilateral chronic fibroid or ulcerative phthisis. A large number of these have cavities, and some hemorrhage freely. Improvement is much quicker and treatment

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more satisfactory with the lung compressed. This may be the choice of treatment even though the patient is doing well on rest alone. A successful pneumothorax shortens the period of invalidism and this is often of paramount importance to the patience. (2)—Acute or sub-acute exudative cases that show no particular improvement in two months or so. This is rather a doubtful field, but marked improvement is seen in some of these cases. Pleural effusion is quite frequent in this group. (3)—Bilateral cases in which one lung is badly diseased and the other lung with small involvement which is apparently arrested. Occasionally, more or less as a last resort, extensive bilateral cases are compressed, first one lung, then the other. (4)—Any case of serious hemorrhage in which you can determine the source of bleeding.

Phrenicotomy is usually indicated in basal lesions and cases where the basal collapse is poor in artificial pneumothorax, although recently some splendid results have been reported in apical cases, especially with large cavities. It is also often done as a preliminary to thoracoplasty to lessen the shock of complete collapse.

The cauterization of adhesions is a recent, rather technical development, and can be accomplished expertly by only a few surgeons. It involves the use of a thoracoscope and a cautery inserted separately into the chest. This treatment is accessory to artificial pneumothorax.

Thoracoplasty is the most radical procedure. It is used after other treatments have failed. Often adhesions are entirely too dense for pneumothorax, and thoracoplasty must be resorted to. The selection of cases requires more judgment here than in pneumothorax, as the lung is permanently compressed, whereas, in the latter it may be inflated at will. Thoracoplasty finds another indication in persistent empyemata of mixed infection, a number of which result from tuberculosis effusion.

After any of the above surgical procedures have been resorted to, the case is then followed up as in the cases of rest alone. The patient is gradually put on increased exercise until his strength is well established.

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NEWER CONCEPTIONS OF MASTOIDITIS.*

By G. B. TRIBLE, M. D., F. A. C. S., Washington, D. C.

Probably everyone, layman as well as practitioner of medicine, has a conception or mental picture of mastoiditis. Historically, it was one of the first diseases considered to merit surgery. In the lay mind, it is associated with a swelling behind the ear, which all medical men now have come to realize is due most frequently to an external otitis and periostitis, or to a breaking down of the post-auricular gland. Relatively seldom it may be due to acute suppurative conditions of the accessory air cells of the middle ear, which, by eroding their cortex and appearing beneath the periosteum, or burrowing further to the tip of the mastoid, may cause a swelling in that area, perhaps even pointing down the line of the sternocleidomastoid, finally to give us the classic picture of Bezold's abscess. No longer ago than the past summer did the writer hear a conscientious practitioner of wide experience state that he had never had a mastoid infection under his care or supervision that came to a mastoid operation. Still another practitioner, well known and of wide experience in general surgery, stated that he had not found it necessary, during several years of very large practice in and out of an active county hospital, to do a paracentesis at night. There can be no question that both of these gentlemen were correct so far as one can be correct in his recollection. It is perfectly possible when one considers the infinite number of human beings in the world, the infinite variety of reactions to insults to the body economy, that one man can have conceivably an unlimited number of cases showing one type of pathology, while another man of equally wide and broad professional experience could have met diametrically opposite conditions. It is further possible that our conception needs revision, or, at least, a more thorough understanding of the possibilities in any given infection involving the middle ear and mastoid. We can, for all practical purposes, rule out the cryptic infections which do not demonstrate any active middle ear pathology at the time the mastoid infection is first noticed. We may also rule out the rare blood-borne infections that are sometimes seen in the exanthemata, which are

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infections of the temporal bone and which may occur to it, or any part of it, as a bone, and not because of its possession of a middle ear with its intricate structures and its projections about, above, behind, or below it.

Infections extending from the middle ear tend to go, according to our newer conceptions, by widely varied but definitely distinct modes of progress. The first in the order of simplicity is the coalescing type, which may be visualized as a series of waves of infection, somewhat as the waves of a rising tide, lapping the beach, each one extending a little further than the one before, involving a few more cell walls, breaking them down, softening the inter-cellular septa, absorbing their calcium, being held in check by a protecting layer of leucocytes and granulations around the margins, then overcoming in another onslaught this defensive layer, only to break down further by another extension. This may be carried on until finally the mastoid cells are thoroughly coalesced, walls destroyed by pressure necrosis, the invaded portion of the temporal bone converted into a mastoid abscess, which may not be checked until it reaches and absorbs the thin, dense, inner layer of the cortex over the lateral sinus, or the floor above. This gives rise to the peri-sinus abscess, or the extradural abscess, and shows in the radiograph an early clouding of the mastoid cells, a breaking down of the cellular structures and the typical radiographic appearance of a mastoiditis, which so far as the criterion of roentgenology is concerned, only presents a surgical simple mastoid. This is fortunately the mastoid most easily handled, one which may be treated palliatively and which responds kindly to eleventh hour surgery. This is the mastoid we have all been brought up under, in which there is but little question of dispute in diagnosis, one in which the absorbing process will soften the bone in the neighborhood of the antrum, and give us the bulging or sagging of the posterior superior wall of the external meatus. It will show on examination of the pus, by quantitative measures, increase in the calcium content characteristic of breaking down bone, and finally so disintegrate the external boundary that there will be an edema over the mastoid area, giving us the textbook picture we so often describe and unfortunately so seldom see.

The other type is commonly known as acute hemorrhagic or streptococcic mastoiditis, and differs in almost all particulars from the first described. We have no defensive wall, no production of granulations filled with leucocytes staying the advance of the invasion, no coalescing and breaking down by pressure necrosis the inter-cellular walls, no production or destruction and liberation of calcium in the pus from broken up bone, and no typical radiographic report to throw light on the extent and severity of the infection. True, a slight haze may be tentatively suggested in the findings which may or may not be due to the existing infection, but clinically we are confronted by a picture of a systemic invasion associated with an acute suppurative otitis media, with pus showing hemolytic streptococci or the streptococcus mucosus of the German classification. Surgical intervention shows an intensively congested mucous membrane, free bleeding on operation, none of the gelatinous chicken-fat appearing masses in the cells, and, microscopically, there is an engorgement and distention of the arteries and veins, with small thrombi present in the venules of the mucosa. These small thrombi are considered to be Nature's effort at protection, but in an overwhelming infection, unfortunately, appears to be the method of extension. An extension by a thrombosis may end, if in the direction of the brain, by the production of a brain abscess of the acute variety, with no limiting membrane, and, if extending toward the sinus, may result in a sinus thrombosis without macroscopic involvement of the vessel wall, and no visual evidence of infection of the sinus plate. There may be a generalized infection of the blood stream producing bacteremia. The clinical picture is that of a very sick patient, in fact, prostrated. Chills and sweats may be noted, and the temperature curve is very irregular. Otoscopic examination in the early stage shows acute myringitis, with intense engorgement of the vessels of the drum. Paracentesis will give but a few drops of a sero-sanguineous fluid or there may be merely a discharge of blood. It must be kept in mind that this is a systemic invasion from its very onset, and the severity of the infection determines its extension. With a less severe infection there will be a thrombo-phlebitis limited to the mucous membrane. Resolution will then occur with a simple paracentesis or spontaneous rupture. With a more severe type, the thrombo-phlebitis will involve the small

veins in the inter-cellular walls. There will be a rapid destruction of red cells, a very marked leukocytosis with rather characteristic change in the polymorphonuclears. If the condition is extending, and is not held in check by the defenses of the blood stream, Nature calls to the bone marrow, and new cells are rushed to the defense. Their coming is comparable to poorly equipped and raw recruits being hurried into a battle line. The new-formed cells gradually increase in proportion to the total "poly" count, and the clinical picture of the patient corresponds to his pathological findings. Surgery here is done not to provide for the drainage and escape of pus, but to remove and destroy the infected thrombi in the areas that are accessible to surgical intervention. The question of the exact time for such an operation must be decided by the clinical picture presented by each individual patient and checked up by a study of his resistance, as shown in the production of his defense mechanism and evidenced by the changes in the differential white count, particularly in the increasing numbers of the new-formed cells. If intervention has not been in time, the condition goes on by extension of the thrombo-phlebitis into the large veins. We have our thrombo-phlebitis of the lateral sinus, which may extend to the jugular above, or below and backward to the torcular. A blood culture will show often a streptococcus, but its absence is no proof of its non-existence. The positive blood culture is most easily found within a few hours, up to about twenty-four after the primary invasion, and it disappears by the defensive mechanism of the blood, but, if relief is not had by surgical intervention, the increasing infection is not held in check by Nature, and we have a second appearance of bacteria in the blood stream, metastases to the lungs or joints, and the picture is that of a generalized septicemia. If the intervention is properly timed, the temperature tends to return to normal, the fall is by lysis, red cells increase, leucocytosis diminishes, the new-formed cells are no longer needed and no longer found, and the patient makes a recovery which is not as spectacular as the one following the opening and draining of the coalesced type of a mastoiditis, but which is nevertheless satisfactory.

There is another division clearly recognized, which, in its final culmination into a surgical case, may partake of either the coalescing or the hemorrhagic types, and that is the chronic mastoiditis. This is a residual effect of previous suppurative middle ear conditions which have continued as a local focus, probably due to isolated areas of bone caries or to the formation of polypoid degenerative changes in the middle ear mucosa. These are frequently the cases which have had spontaneous perforations which were improperly placed from a standpoint of drainage, or perforations which were marginal and which destroyed the annulus tympanicus and which by a pressure necrosis have destroyed the mucous covering of the ossicles or tympanic cavity, eroded the bone, set up a point of caries and kept up a mild inflammatory reaction in the accessory air cells of the mastoid, which possibly have been followed by a deposit of the new-formed bone lacking in vitality, usually abnormal in its constituency. The final result is an acute infection involving again the mastoid process which may soften and absorb the bony structure, so that it is converted into either abscesses or areas of abscess formation; or the bone may prove its resistance to total destruction, when its nutrient vessels may become the pathway of invasion and an extension be set up in the surrounding structures, so that meningitis from extension from a chronic suppurative middle ear is not uncommon, while, on the other hand, if resisting infection and destruction, there may be an ingrowing of the epithelium from the canal or from the remnants of the old drum, which folds on itself and forms whorls of epithelial cells, the clinical cholesteatoma. The formation and production of a cholesteatoma may go on and may push away its bony walls until it occupies a large portion of the former mastoid cells, extending and enlarging the antrum, finally eroding the cortex and involving the dura. Taking up this last condition first, a decidedly new interpretation of the steps necessary to handle this situation is expressed by Tobey, of Boston, who advocates merely an intra-meatal operation, removing the projecting overhang, exposing the enlarged mastoid antrum, removing by incision and dislocation the remnants of the ossicles, clearing away the debris and accumulated fragments of the disintegrated epithelial cells of the broken down mass and leaving the outer walls of the cholesteatoma to serve as the lining membrane of the enlarged middle ear and antrum.

There is yet another division—of but very

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little importance in our contemporary American medicine—and that is a tubercular mastoid, practically non-existent in private practice in this country, though of considerable importance on the Continent, and given as high as 15 per cent in Viennese clinics. Only by extensive bacteriological research can such a diagnosis be established, and its treatment does not differ in many particulars from that of other tubercular lesions of bone.

There is great danger in forming opinions from isolated cases and the various reports of miraculous cures should not blind us to the possibilities of erroneous interpretations or that the wish might perhaps have been father to the thought. This probably accounts for the many successful outcomes reported by various writers with all sorts of treatment by the most complicated chemicals, coupled with electrical assistance, as in zinc ionization, the cures by injection of aseptic milk, the use of radium, X-ray, and reflected sunlight or the ultra-violet rays. Largely is this due to the questionable diagnosis of mastoiditis in such cases, which has been based on the fact that the X-ray showed an involvement of the antrum and cells and that there was pain on pressure and in some cases swelling, or edema and swelling over the mastoid area. These phenomenal cures by other than surgical means of conditions which usually require surgical intervention cannot be substantiated in a majority of cases, and an isolated case cannot form a basis for the neglect of commonly recognized surgical measures. There is a surprising uniformity in the records of all large special hospitals in the percentage of cases coming to operation and in types of pathology found. There is one important group, however, in which operative intervention is becoming less frequent, and that is in the chronic mastoiditis following prolonged suppurative middle ear disease. The operations are fewer and the results striven for have changed from the conception of a successful radical mastoid operation, as indicated by a dry ear, to that of a radical mastoid which has cleared up a dangerous lesion, such as carious bone, to be removed, and not necessarily stopped an otorrhea. In passing, it must be noted that the reaction in regard to the acute suppurative middle ear has also undergone a change. By most men in a recent large convention of specialists, the idea of repeated paracenteses in the same individual was decried, considered unnecessary and a hindrance to the natural evolution of healing. A free paracentesis extending from well up behind the long process, down the full length of the process, across the lower border of the process and up anteriorly, making nearly a letter "U," was advocated. Sterilization of the canal is considered unnecessary. Cultures were advised to be taken from the paracentesis knife. No suction is to be employed to remove the secretions because of the danger of dislocating the finer structures. No stress is laid on the dry treatment following paracentesis, but irrigation is advocated to remove the accumulated blood and secretions, which gradually cease as the condition subsides.

Complications of mastoiditis follow in exactly the same groups as the pathology. An understanding of the type presented will permit a conjecture as to the outcome, and what complications we should be on guard against.

Kopetzky has gone into this subject at great length, and his findings are, within present knowledge, impossible to surpass. In a review of 126 cases of coalescent mastoiditis, he finds subperiosteal abscess in twenty-five, meningitis in five, labyrinthitis in one, extradural abscess in six, perisinal abscess in thirty-four, deaths occurring in eleven, or 9 per cent. In the forty-four cases of hemorrhagic mastoiditis, perisinal abscess was in four, sinus thrombosis in fifteen, meningitis in two, death occurring in seven, or 16 per cent, nearly twice the percentage fatality as compared to the coalescent type.

1801 *Eye Street, Northwest.*

Correspondence

Concerning Poliomyelitis.

August 8, 1929.

To Virginia Doctors:

In view of the present interest in poliomyelitis and the use of the serum of convalescents in connection with this disease, we feel that it might be helpful to the profession to give some information in addition to what was contained in recent letters to Virginia doctors.

In many cases poliomyelitis can be diagnosed before the paralysis develops. It is most important that the disease should be recognized in the pre-paralytic stage for it is during that stage that the convalescent serum

should be administered. Two physical signs—stiffness of the neck and rigidity of the spine—are pathognomonic of involvement of the nervous system. The pre-paralytic stage lasts for from one to three days.

The usual symptoms are fever, headache, gastro-intestinal disturbance, either vomiting or constipation, irritability and pain usually located in the back, back of the neck or in the limbs.

The two physical signs which should be especially looked for are, (1) stiffness of the neck. This is best elicited by flexing the neck on the trunk. The head can be brought half way forward but in attempting to bring it farther the child resists and complains of pain. (2) Limitation of the movements of the spine. This is best tested by having the child sit up in bed. The normal child, or child ill with other infections, has a flexible spine. The child in the pre-paralytic stage of poliomyelitis keeps the spine rigid.

Other physical signs of not so much importance are constipation, flushed face with circum-oral pallor and rapidity of the pulse in proportion to the temperature. The reflexes at this stage are usually exaggerated.

For those cases which give the two important physical signs noted above, examination of the spinal fluid will give verification. The fluid is under pressure, slightly cloudy, shows an increased cell count and increased globulin.

It is claimed that in many cases the use of convalescent serum prevents death, prevents the child from becoming paralyzed and prevents the severity of the paralysis. *It should be given in the pre-paralytic stage.* The dosage varies. Most authorities recommend from 15 to 25 c.c. into the spine with 50 c.c. intravenously. The State Department of Health has at present a limited supply of this serum but it is extremely scarce; and we cannot ask people to give their blood unless it is to help a case definitely diagnosed by spinal puncture.

ENNION G. WILLIAMS,
State Health Commissioner.

Abstracts

The Role of the Vaccination Dressing in the Development of Postvaccinal Tetanus.*

Charles Armstrong, Surgeon, *United States Public Health Service*, in a recent article, says that investigations recently reported by the Public Health Service have demonstrated that dressings strapped over a vaccination site are the essential factor in the absence of which postvaccinal tetanus will rarely, if in fact ever, develop following cutaneous anti-smallpox vaccination. This conclusion is based upon the absence of postvaccinal tetanus following vaccinations on which fixed coverings were not applied. This open method of vaccination is now widely employed. On the other hand, 116 cases of the complication referred to have occurred over a series of years in individuals whose "takes" were covered by some type of shield or dressing strapped over the site.

It was, moreover, shown that monkeys and rabbits which are quite refractory to experimental postvaccinal tetanus, provided the intentionally tetanus-contaminated cutaneous vaccinations are left without dressings, became highly susceptible when the same type of vaccination was covered by some type of commercial dressing strapped to the vaccination site.

Experience has shown that shields and dressings, in comparison to openly treated vaccinations, tend to produce deep, severe "takes" and to favor the development of an exudate.

This accumulation of broken down material, retained by the dressing at the vaccination site, wherein tetanus organisms may become buried and thus find anaerobic conditions, is the essential without which postvaccinal tetanus will not develop under natural conditions in cutaneous vaccinations.

Where fixed coverings are not employed, the continual wiping and ventilating action exerted when the arm is moved within the clothing tends to keep the vesicle dry, cool, and firm. This, as shown by experience, tends to prevent the development of exudates. Moreover, if exudation does take place the moisture is promptly wiped away by the sleeve or bed clothes.

When dressings are strapped over a vaccination the accumulation of exudate beneath may lead to the development of a foul odor. Such an odor has been noted so frequently in cases developing postvaccinal tetanus that its presence should be considered a danger signal. A foul odor has not been encountered by the investigator in openly treated vaccinations.

The fact that postvaccinal tetanus has been confined to primary "takes" is explained by assuming that an accumulation of necrotic exu-

*Author's abstract from Public Health Reports, August 2, 1929, v. 44, pp. 1871-1883.

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date sufficient to supply the conditions necessary for tetanus to develop occurs only in the relatively more severe primary vaccinations which were covered by dressings.

The long interval from vaccination to onset of tetanus in these cases (usually about twenty-one days) is also explicable on the assumption that the organism is unable to develop until it becomes embedded in a mass of necrotic exudate such as might be expected to develop under suitable conditions from the 10th to 15th day following a primary vaccination.*

The contention that a deep implantation of tetanus spores in a devitalized medium is the essential condition for the development of postvaccinal tetanus was also confirmed by the fact that the intradermal (injection) method of vaccination proved to be an efficient method for producing experimental postvaccinal tetanus.† It was found that 75 per cent of the animals vaccinated by this method, utilizing a virus intentionally contaminated with heated tetanus spores, developed postvaccinal tetanus even in the absence of dressings. Moreover, cutaneous vaccinations in animals which were shown to be practically insusceptible to tetanus infection when a tetanus-contaminated vaccine is employed, provided the lesion was treated without a covering, became highly susceptible when the tetanus spores were introduced via the blood stream or into the subcutaneous lymphatic draining to the lesion. These routes of introducing the spores enabled some of them to reach the deeper areas of the "take" where they could develop their toxin. Infection by way of the blood stream or lymphatics is thought, however, to be uncommon, if indeed it ever occurs, in the postvaccinal tetanus of man: since such a conception is contrary to the general experience with tetanus in ordinary wounds. Moreover, the fact that openly treated cutaneous vaccinations in animals are so readily infected through the blood stream or the lymphatics, while in man, as far as known to us, no case has developed in this type of vaccination argues strongly against such a route of infection. These considerations, together with the fact that prolonged search at the Hygienic Laboratory of the Public Health Service has failed to demonstrate tetanus germs in commercial vaccine, force one to conclude that the infection is due to the accidental contamination of the "take" from other sources.

While it may not be possible to eliminate such occasional accidental contaminations, it seems that postvaccinal tetanus can be eliminated by observing a proper vaccination technic. A proper vaccination insertion as defined by the Public Health Service should be small and superficial (never over 1/8 inch in greatest diameter), and made by some method that does not remove the epidermis. Such insertions treated openly, i. e., without the use of shields or dressings strapped to the site, have never in so far as is known been followed by postvaccinal tetanus.

The physician is therefore advised to abandon the use of dressings which are fixed at the vaccination site. He should also advise the vaccinated individual, or those responsible for him, concerning the dangers of home-applied shields and dressings.

Further information concerning vaccination methods and complications may be had by addressing the Surgeon General of the United States Public Health Service, Washington, D. C.

*In ordinary traumatic tetanus of equal severity the incubation period is usually less than 10 days.

†In the intradermal method of vaccination which has been employed to a limited extent .1 c.c. to .2 c.c. of a diluted virus is injected into the skin by means of a syringe.

Proceedings of Societies

The Fauquier County Medical Society

Held an interesting annual meeting in the Spring, as guests of Dr. S. W. Maphis and Dr. M. B. Hiden, at the former's home in Warrenton, Va. Dr. Richard Mason, of The Plains, presided. There was a large attendance of doctors from both Fauquier and Loudoun Counties, as also several dentists. Papers were read by Dr. M. B. Hiden, Dr. J. L. Thornton and Dr. W. G. Trow, all of Warrenton, and these were freely discussed. In addition to this program, the annual election of officers was held, which resulted as follows: President, Dr. Wade C. Payne, Haymarket; Vice-Presidents, Drs. J. E. Knight, Catlett, and W. G. Trow, Warrenton; Treasurer, Dr. V. L. McCullers, Remington; Secretary, Dr. J. R. Allen, Marshall; and Assistant Secretary, Dr. Martin B. Hiden, Warrenton. A delightful supper followed the meeting.

The Mecklenburg County Medical Society

Had a well attended meeting in June, under the presidency of Dr. C. V. Montgomery, of South Hill. Dr. A. T. Finch, Chase City, was in his accustomed placed as secretary. It was

stated that the members of the Society had inoculated eighteen hundred children with the toxin-antitoxin, for the Mecklenburg County schools, for which they received just the amount which would have been paid to the State Board of Health. The physicians entered into the work heartily and did it efficiently. After electing delegates for the Charlottesville meeting of the State Society, the Society adjourned to meet at Chase City in September.

The Augusta County Medical Association

Held its annual business and social meeting, August the 7th, at 4 P. M., at Valley Mills Swimming Park, under the presidency of Dr. George F. Hollar, of Waynesboro. There was a large attendance and following the business meeting a chicken dinner was served. Several new members were admitted and delegate to the Charlottesville meeting of the State Society was elected. The following are officers elected for the ensuing year: President, Dr. Richard P. Bell, Staunton; first vice-president, Dr. J. E. Womack, Staunton; secretary, Dr. W. F. Hartman, Staunton, R. D.; and treasurer, Dr. T. M. Parkins, Staunton. The two last named officers were re-elected.

Preliminary Report Made Before Committee on Post-Graduate Study of the Medical Society of Virginia.

At a meeting of the Committee on Post-Graduate Study of the Medical Society of Virginia, June 19, 1929, Mr. George B. Zehmer, Director of the Extension Division of the University of Virginia, submitted the following preliminary report on the study of the needs and opportunities for post-graduate medical instruction in Virginia.

MR. ZEHMER'S REPORT

I submit herewith a preliminary report on the study of the needs and opportunities for post-graduate medical instruction in Virginia, which study I am making at the request of your committee. I wish to emphasize the fact, however, that this report is brief and tentative. The final report should be in your hands on or before October 15.

Rather complete records have been collected on post-graduate medical extension activities in the States of Michigan, Iowa, New York, Pennsylvania, North Carolina, Minnesota and Wisconsin, and in the boroughs of Brooklyn and Manhattan, in New York City, and in the city of Philadelphia. A bibliography has been prepared on the subject of post-graduate medical instruction both in this country and abroad. While a study had been made of the systems that are now in vogue in this country, a thoughtful digest of the bibliography on the subject has not yet been completed. This report is based on the investigations which have thus far been made and on personal interviews that have been held with leaders in the work. The report sets forth in the main a sort of composite picture, or cross-section, of the educational activities that are now being carried on in the field of post-graduate medical instruction in the several states of this country. It may suggest points of departure for Virginia. For convenience the subject will be conducted under topical headings.

I. NEEDS FOR POST-GRADUATE MEDICAL INSTRUCTION.—In dealing with the question of the needs for post-graduate medical instruction in Virginia, it will be approached from four points of view:

(1) There will be set forth a statement of the recent progress that has been, and that is now being, made in both the theory and practice of Medicine.

(2) Attention will be called to, and brief outline made of, the several experiments or practices in post-graduate medical instruction that are now being carried on in this and other countries.

(3) A report will be made on the opinions of leading physicians both in and out of the state on the needs for this new type of instruction in the field of Medicine.

(4) Summaries of questionnaires to Virginia physicians on the subject of the needs and opportunities for post-graduate instruction will be presented.

II. COURSES OF INSTRUCTION.—One or all of three types of courses are usually offered. These are lecture series, short courses, and intensive courses.

Lecture Series are usually the starting point and remain the most popular type of work both from point of view of general interest and attendance and in methods of presentation. Though popular, they may be made truly educational if we can accept the verdict of those who have had experience in this work There is no sequence in subject matter in lectures of this type. Whereas Lecture I may be on Methods of Treating Infections of the Hand; Lecture II might well be on Backache or the Treatment of Pneumonia. Much can be done to make this type of lecture meet seasonal or epidemical demands.

Lectures of this type come at regular intervals, usually weekly—though at times semi-weekly, at others bi-weekly—for a definite number of weeks and for appropriate seasons of the year. In rural districts, such lectures are usually held in the spring, summer or fall. In cities, the practice is usually to hold these lectures in the fall and early winter, and in later winter and early spring. This type of work can be easily adapted to supplement typical medical society meetings.

Short Courses, the second type of post-graduate instruction usually found, are somewhat more orthodox as an educational method than the lecture series. Each course deals with one subject only. In practice one usually finds from eight to fifteen lectures, generally ten in number, in a short course. Generally there is one lecture a week at the same time and place throughout the course. Whereas, in the lecture series it is commonly the custom to vary the speakers from meeting to meeting, in a short course it seems wise to secure a single instructor to conduct the entire course. The time of the year for short courses can be adapted to the needs of the community in which they are offered. Summer months seem the most practical for courses for rural physicians, whereas the late fall, winter or early spring months seem most appropriate for urban doctors.

Intensive Courses. Intensive courses, as the term implies, deal rather profoundly and at considerable

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length with the subject matter under consideration. They, too, consider only one subject throughout the course. The subject would naturally be treated more fully and thoroughly than by the methods employed in the short course. Generally there are from twenty to fifty hours, divided between informal lectures, discussions and demonstrations, in an intensive course. The intensive courses are almost necessarily conducted in connection with some well organized hospital or medical school. The willingness of members of the staff of the hospital or medical school to assist in this work is necessary before courses of this type can be undertaken. The number who may register for intensive courses is generally in practice limited from three to five. The cost to physicians enrolled is usually considerably higher than that for attendance either on lectures or short courses.

Special Types. In addition to the three general types of instruction just discussed and more generally found, the following special types have been observed and are worth notice. Of these the *concentrated short courses and clinics* are the most common. In this method usually from three to as many as ten days consecutively are set aside for work in one or more subjects. Such courses or clinics are commonly held in connection with a hospital or medical teaching center where use can be made of clinical materials, laboratory equipment, and opportunity for demonstrations can be had. The work during the entire period may be devoted exclusively to one subject, such as Pediatrics or Internal Medicine or Physical Diagnosis; or it may be so divided that attention will be given to a number of different subjects and opportunities offered to the attending physicians to select topics of most interest. The quarterly clinics that are planned by and conducted at the Medical School of the University of Virginia are typical of such concentrated short courses.

Libraries. In a number of centers much interest and attention is now being given to the development of medical libraries in connection with hospitals, medical teaching centers and central offices of county, city or state medical societies or associations. In some of the large centers, such as Manhattan or Brooklyn, in New York City, for example, which are by no means typical of conditions that are to be found throughout the country, quite large libraries have been developed and library staffs are being employed to aid the physicians in every way possible. It is of interest to note in this connection that the library in Brooklyn is now working on a plan to make it possible to send by mail to the physicians who cannot come to the library building conveniently special types of materials for reference and use for a specified time. We recall also that the medical school in Richmond has for some time been working on a plan to put its library more readily at the disposal not only of the physicians in Richmond and vicinity, but in so far as possible to those living throughout the state. The original plan was to make this possible through package loan libraries.

Irrespective of progress which has been made in developing medical libraries as a means of instruction for practicing physicians, it has, we feel confident, great possibilities and is a means which should be stressed.

Alumni Relations. While not much progress has been made in first attempts of medical teaching centers to assume some guardianship over their graduates in the matter of keeping them in touch with new developments in medical theory and practice, the fact that steps are being made along this line is worthy of notice and deserves thoughtful consideration. Medical teaching centers occupy a strategic position in relation to the whole question of continuing education for doctors. Perhaps the point of departure for a medical school is with its own graduates.

Some students of the problem of post-graduate medical instruction say that unless educational contacts are established with the practitioner during the ten years immediately following his graduation, he is hopelessly lost as a prospective post-graduate student.

The Radio. For special types of instruction to physicians, especially at times of epidemics or other emergencies, the radio as a special agency for reaching practitioners perhaps should not be overlooked.

III. *Methods of Instruction.*—Reports on post-graduate medical instruction practice almost universally emphasize the fact that this type of instruction must deal with the practical and in a practical way. The instructor must avoid in so far as possible highly technical terminology. In the main the work must deal with common diseases and problems. It is the universal opinion of those having experience with the work that written lectures or reports always fail as a method of presentation. The clinical method is recommended as the most effective one for reaching the practitioner. Slides, pictures and charts, when carefully selected, also prove most effective aids. In this connection, I recall that Dr. George H. Meeker, Dean of the Pennsylvania Graduate School of Medicine, says that it is wise for the instructor to assume that the practitioner knows very little about specific methods and means for treating even the most commonplace diseases and for meeting the most general problems. While such an approach will mean review work for many physicians, it will insure thorough grounding in fundamentals in all first attempts.

The Place and Purpose of Post-Graduate Medical Instruction. There arises at this point the question of the place and function of what we have been referring to as post-graduate medical instruction. From our investigations, it seems obvious that the work is distinct from that commonly done in the medical schools leading towards the M. D. Degree and from the more systematic graduate work that one should get in specialized and formally conducted graduate medical schools. In so far as possible this new type of work should supplement but not assign to itself the fields now covered by these two agencies; but it seems to us that there is a distinct field for a new type of instruction that is not designed to train specialists nor to advance the theory of Medicine, but which has as its principal aim the task of keeping the average practitioner alert to the progress which is being made in the field of his practice and to improve the quality of medical practices. Therefore, in the main, as has been suggested, this type of work must be made, we believe, exceedingly practical and it must deal on the whole with the more general and common problems. We see the danger of confusing this type of work with most serious graduate medical education. We are inclined to think that a new term might be devised which would make this distinction clear and which would at the same time dignify even the most elementary attempts on the part of the physician to keep abreast of the new developments and advances which are made in his profession. To give the opinion of Dr. Meeker again, he states that post-graduate medical instruction, of the type which we have been discussing, calls for as much thought, planning and preparation in advance of any program as is required for the establishment of a medical school or

hospital. Failure to realize this fact, he felt, meant failure in first efforts.

Instructors. Two policies are found in reference to the choice of instructors either of which, or a combination of which, may be adopted—depending somewhat on local conditions:

(1) Selecting—and necessarily at rather large financial costs—only outside or out-state physicians or teachers. North Carolina has adopted and adhered strictly to this policy.

(2) Relying exclusively—with relatively small expenses—on outstanding local physicians and teachers. Brooklyn has adopted rather largely this plan.

Perhaps a wise plan would be a combination of these two which seems to be the method generally employed.

Organization and Control. There is not much uniformity in organization and methods of control in the several plans that are being carried on in this country. Usually the work has grown up about one or two, or at the most four or five, personalities—at times connected with medical schools, at others, outstanding practitioners, and again from wise leaders among officials of medical societies or associations. Hence, at times the work has been independent of state or local medical societies, except in so far as such organizations wished to co-operate. It is well to point out that the work is evolving and there are few set or fixed plans in practice today. The experience in the State of Michigan is perhaps the most interesting, from point of view of its growth and development and will be discussed in detail in the final report. In all of the present attempts, however, there seems to be a growing tendency for the work to be closely affiliated with the interests and activities of county, city or state medical societies or associations. Interest eventually must spring from or be aroused in the practitioners themselves. This does not, however, place less importance on the need for wise leadership or for the necessity of the fixing of responsibility. Furthermore, the particular type of organization, especially in its details, must be adapted to meet local needs and conditions. Thinking now in terms of a statewide program for Virginia, the following in general outline may be the best form of organization:

(1) An Executive Committee, preferably small, composed of representatives from the Medical Society of Virginia, the State Department of Health, and the two medical schools in Virginia. Perhaps a prominent lay member is desired. I think Michigan, for example, in their experience would recommend a lay member.

(2) An Executive Officer in the person of some outstanding physician or medical teacher in the state who is personally interested in the movement, who is held in high esteem by physicians throughout the state, who could make wise decisions on such questions as the selection of speakers or instructors, choice of subject matter or of lectures or courses, who could wisely attend to details of publicity and announcements and who, above everything, would be willing for the first twelve or eighteen months or two years to give a large part of his time to the work. We are almost prepared to say that the immediate success of attempts at postgraduate medical instruction depends upon the wise selection of this officer.

(3) An able secretary, preferably a man, to assist the Executive Officer, to learn the details, methods and eventually to do most, if not all, of the necessary travelling and to relieve the Executive Officer of most of the details in planning, announcing and organizing the work.

(4) A part-time stenographer with some small provision for office supplies and equipment.

Finance. There is no uniformity in practice in methods of financing post-graduate medical instruction. Where the work is sponsored by an individual or group of individuals and generally by state university medical or extension departments, fees are required which will support either in whole or in part the program. Where work is sponsored by medical societies, at times the policy is to charge a small fee to doctors to help support the work, at others to support it entirely, by the fees paid to such medical societies by its members. In the latter case small fees are charged to physicians not members of the association sponsoring the program. From the studies which have been made, however, and from several years' experience dealing with adult students of many types and representing many professions, we recommend very strongly that at least fifty per cent of the cost of the work attempted along this line in Virginia be paid by the doctors who enroll. Not only in our opinion does it seem fair that the doctor in practice should pay a part of the cost, but in this, as in all forms of adult education, payment of at least a part of the cost of instruction by those taught insures an interest which it seems almost impossible to secure through the policy of free education.

Importance of Attention to Details of Organization and Management. All of the agencies at work in this field emphasize the very great importance of careful attention to details, especially to such particulars as the following:

The form of announcements of courses.

Care in the time of announcements, and in announcing programs sufficiently in advance.

The completeness of announcements.

Follow-up announcements.

Methods of publicity.

Care in the selection of suitable places of meeting.

As an illustration of the importance of attention to details, both Brooklyn and Philadelphia report that attention to the single factor of securing parking space for the care of physicians near the building at the time of the meeting alone would increase attendance from approximately thirty to forty per cent.

Despite the bad reputation the word has, there must be a certain kind of salesmanship in putting on a course successfully, especially in connection with the first effort.

We ask for criticisms on any suggestions which have been contained herein and for further suggestions that may help in presenting finally a more complete and valuable report.

Respectfully submitted,

GEORGE B. ZEHMER.
Director.

The various features of this report were discussed at length by the members of the Committee, following which, the chairman, Dr. J. W. Preston, asked Mr. Zehmer to give a complete report when he had secured all information he is seeking.

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Medical News of the Past

Presidents and Places of Meeting of Medical Society of Virginia.

At this season, when interest centers around the meeting of the Medical Society of Virginia, it seems that every one will be interested in refreshing themselves on the names of presidents and places of meeting of our former sessions.

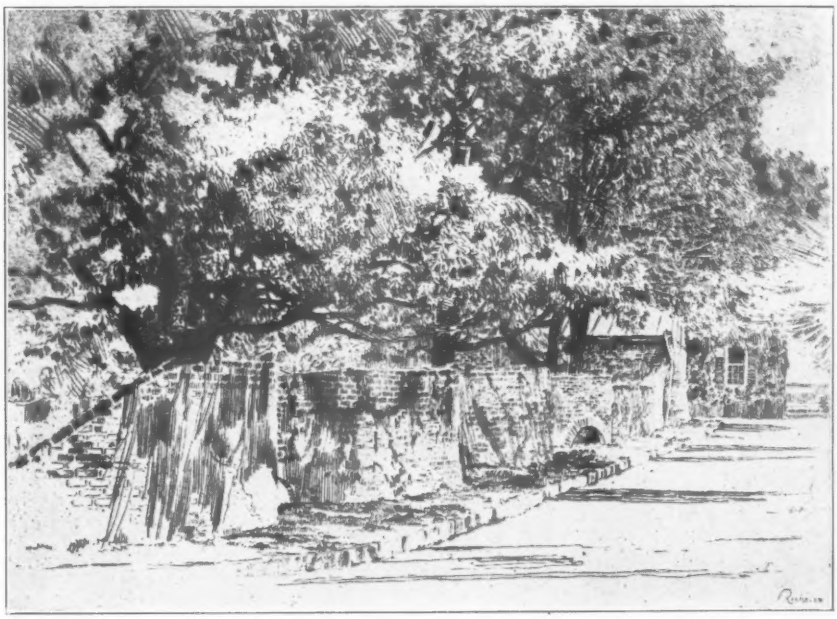
Dr. James B. McCaw, Richmond, was chairman of the convention which assembled in Richmond, November 2, 1870, to organize the Medical Society of Virginia. Below is given a list of presidents, followed by names of places and years of meetings over which they presided:

President	Place of Meeting	Year of Meeting
Dr. R. S. Payne, Lynchburg	Richmond	1871
Dr. A. M. Fauntleroy, Staunton	Lynchburg	1872
Dr. Harvey Black, Blacksburg	Staunton	1873
Dr. A. G. Tebault, London Bridge	Norfolk	1874
Dr. S. C. Gleaves, Wytheville	Abingdon	1875
Dr. F. D. Cunningham, Richmond	Richmond	1876
Dr. Jas. L. Cabell, University	Charlottesville	1877
Dr. J. H. Claiborne, Petersburg	Petersburg	1878
Dr. L. S. Joynes, Richmond	Richmond	1879
Dr. Henry Latham, Lynchburg	Alexandria	1880
Dr. Hunter McGuire, Richmond	Danville	1881
Dr. G. William Semple, Hampton	Old Point Comfort	1882
Dr. W. D. Cooper, Morrisville	Fauquier White Sulphur Springs	1883
Dr. J. E. Chancellor, Charlottesville	Rockbridge Alum Springs	1884
Dr. S. K. Jackson, Norfolk	Rawley Springs	1885
Dr. Rawley W. Martin, Chatham	Alleghany Springs	1886
Dr. Bedford Brown, Alexandria	Fredericksburg	1887
Dr. Benjamin Blackford, Lynchburg	Richmond	1888
Dr. E. W. Rowe, Orange, C. H.	Norfolk	1889
Dr. Oscar Wiley, Salem	Roanoke	1890
Dr. Wm. W. Parker, Richmond	Rockbridge Alum Springs	1891
Dr. H. Gray Latham, Lynchburg	Lynchburg	1892
Dr. Herbert M. Nash, Norfolk	Alleghany Springs	1893
Dr. William P. McGuire, Winchester	Charlottesville	1894
Dr. Robert J. Preston, Abingdon	Richmond	1895
Dr. Wm. L. Robinson, Danville	Wytheville	1896
Dr. Geo. Ben Johnston, Richmond	Rockbridge Alum Springs	1897
Dr. Lewis E. Harvie, Danville	Hot Springs	1898
Dr. Jacob Michaux, Richmond	Virginia Beach	1899
Dr. Hugh T. Nelson, Charlottesville	Richmond	1900
Dr. J. R. Gildersleeve, Tazewell	Charlottesville	1901
Dr. R. S. Martin, Stuart	Lynchburg	1902
Dr. John N. Upshur, Richmond	Newport News	1903
Dr. Joseph A. Gale, Roanoke	Roanoke	1904
Dr. Wm. S. Christian, Urbanna	Richmond	1905
Dr. Lomax Gwathmey, Norfolk	Norfolk	1906
Dr. Paul B. Barringer, Charlottesville	Charlottesville	1907
Dr. Wm. F. Drewry, Petersburg	Chase City	1908
Dr. Stuart McGuire, Richmond	Richmond	1909
Dr. E. T. Brady, Abingdon	Roanoke	1910
Dr. O. C. Wright, Jarratt	Norfolk	1911
Dr. Hugh M. Taylor, Richmond	Richmond	1912
Dr. Southgate Leigh, Norfolk	Lynchburg	1913
Dr. Stephen Harnsberger, Catlett	Washington, D. C.	1914
Dr. Samuel Lile, Lynchburg	Richmond	1915
Dr. Joseph A. White, Richmond	Norfolk	1916
Dr. Geo. A. Stover, South Boston	Roanoke	1917
Dr. E. G. Williams, Richmond. Owing to influenza epidemic and the World War, meeting was not held in 1918, and Dr. Williams held over as president	Richmond	1919
Dr. Paulus A. Irving, Farmville	Petersburg	1920
Dr. Alfred L. Gray, Richmond	Lynchburg	1921
Dr. E. C. S. Taliaferro, Norfolk	Norfolk	1922
Dr. John Staige Davis, University	Roanoke	1923
Dr. W. W. Chaffin,* Pulaski	Staunton	1924
Dr. Hunter H. McGuire, Winchester	Richmond	1925
Dr. W. L. Harris, Norfolk	Norfolk	1926
Dr. J. Shelton Horsley, Richmond	Petersburg	1927
Dr. J. W. Preston, Roanoke	Danville	1928
Dr. J. Bolling Jones, Petersburg	Charlottesville	1929

*On account of Dr. Chaffin's illness, the first vice-president, Dr. H. H. McGuire, of Winchester, presided in 1924.

CHARLOTTESVILLE, VIRGINIA

Convention City for the Sixtieth Annual Session of Medical Society of Virginia October 22-24, 1929



Serpentine Wall, University of Virginia.

The sixtieth annual meeting of the Society presents somewhat unusual and interesting features due to the fact that it is being held in Charlottesville and that it is to be in conjunction with the dedication of the Medical School's new buildings at the University. Many changes in the City of Charlottesville, in Albemarle County, and in the University have occurred since the Medical Society of Virginia met there twenty-two years ago. There will be an excellent opportunity therefore to combine the medical meeting with a survey of the marked progress which is taking place in and around one of the older cities of the State.

In recent years Charlottesville has grown in size and population; many new industries have become established there, which have increased the opportunities of business and employment. In a medical way the growth has been phenomenal.

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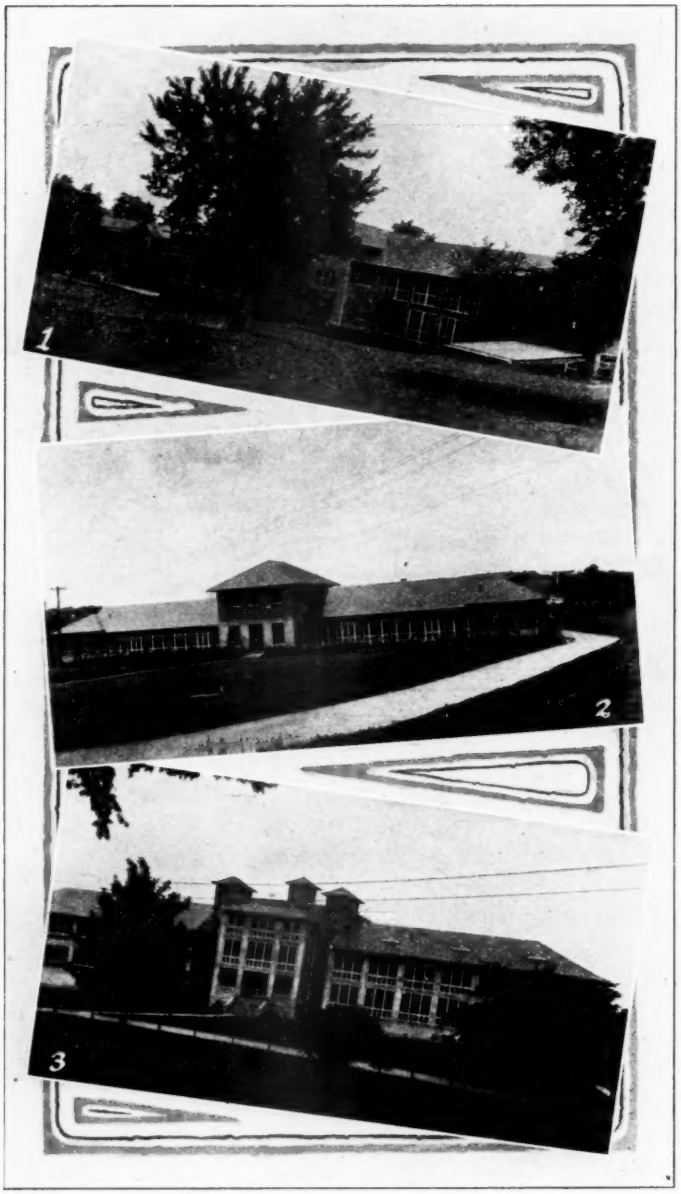
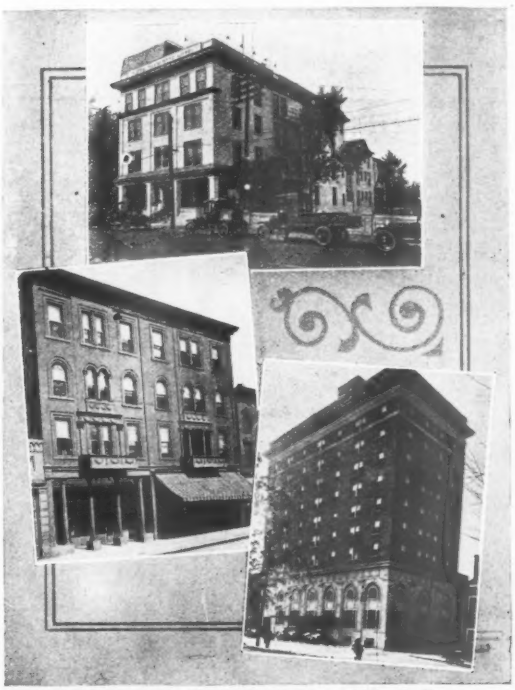


Blue Ridge Sanatorium.
1. Infirmary; 2. Children's Building; 3. Masonic Building.

The Blue Ridge Sanatorium has developed and is ideally located and arranged for the to a capacity of 230 adults and forty children proper care of pulmonary cases.

Martha Jefferson Hospital.

The Martha Jefferson Hospital has nearly completed a sixty bed addition to its former thirty bed unit. This building will make available an up-to-date private hospital for residents of the community and will allow the physicians associated therein much improved facilities of all kinds.



Hotels—Queen Charlotte, Gleason and Monticello.

Several churches have greatly improved or rebuilt their former places of worship; especially is this true of the Baptist, Methodist, and Episcopalian, so that with much improved and expanded facilities they may spread their influence more easily over a much greater field.

A new and up-to-the-minute hotel, The Monticello, has brought Charlottesville to the front in providing accommodations for the tourist and traveler. The hotel offers all the advantages of the modern hotel usual in a much larger city. It is situated on Court Square just opposite the very old Court House and the Stonewall Jackson Park in which is a beautiful and artistic statue of General Jackson on one of his chargers. The Monticello searchlight is on the roof of this hotel and sheds its 1,380,000,000 candle-power beam for hundreds of miles to warn the traveler by night that the town is still there.

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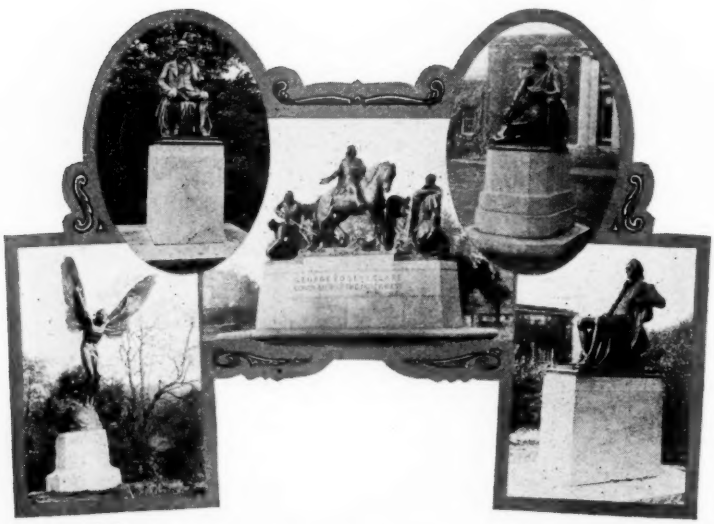
There are in various parts of the city and University a number of noted statues of famous figures in history. Four of these statues with their surrounding parks have been presented to the city by that generous gentleman, Mr. Paul Goodloe McIntire. These statues are excellent examples of sculpture and are well worth an inspection. The one of General Jackson by Stanley Keck and the one of General Lee on "Traveler" can be especially emphasized.

Robert E. Lee Monument.

Lewis and Clark Monument.

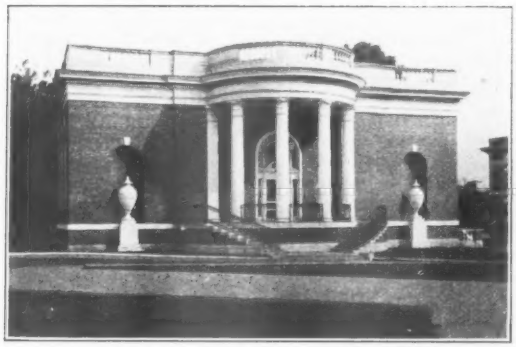
"Stonewall" Jackson Monument



Jefferson McConnell

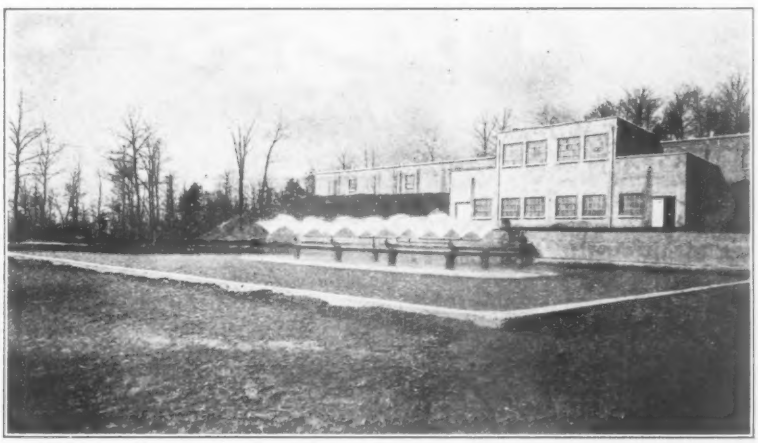
George Rogers Clark

Homer Jefferson



McIntire Public Library.

The Public Library, also a gift of Mr. McIntire, is one of the best examples of pure colonial architecture hereabouts. There are some 14,000 volumes in this building so that its service is widespread, and its usefulness and popularity is increasing rapidly.



Filtration Plant.

About seven years ago a new source for water supply was found and a new filter plant and distribution center built. Today in consequence this communty has a plentiful supply of perfectly pure, soft water. To those who are acquainted with the older conditions, assurance may be given that a distinct and pleasant surprise is in store for them.

The latest and most popular development for social and physical recreation is the new Farmington Country Club. Farmington was one of the most attractive estates in this vicinity and was surrounded with the true atmosphere of former times; the house and its associated buildings were built soon after Monticello was finished so that they contain clear cut evidence of Jefferson's influence. These buildings with about eight hundred acres of land were purchased and have been reconstructed to serve as a country club with an

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eighteen hole golf course, a swimming pool, a horse-show ring and steeple-chase course, and all the necessary adjuncts to make it an up-to-date club. The scenery as viewed from the open terrace is beautiful beyond description, especially at sunset. The golf course is laid out to utilize the natural rolling country and in consequence has many truly "natural holes."

Only very recently has the Aviation School been established. A large hangar, a delightful club-house, and a suitable three-way runway have been made and actual landings of visiting planes is a daily occurrence. Anyone wishing to travel to the meeting in his plane may be assured of proper landing-fields, and housing for himself and plane.

Farmington Country Club.
Two "Busy" Doctors on the 3rd Green.

Monticello.

Monticello needs very little description; it must be seen to be appreciated. This simple but perfect home of the writer of the Declaration of Independence and Father of the University of Virginia is filled with architectural and mechanical wonders which might today be considered remarkable, even in this, the mechanical age. Everyone should visit at least once the home of the Third President of the United States. The buildings and grounds have been reconditioned and partially refurnished by the Thomas Jefferson Memorial Foundation.

Michie Tavern.

Just below Monticello, about half-way down the mountain, is the Michie Tavern. This building is an original tavern of olden times, which was moved piece by piece twenty miles and re-

built on its present site in identical shape and detail. This old treasure is filled with a remarkable collection of antiques of all sorts and can rival if not outstrip any museum of similar character. By all means visit the Tavern.

Rotunda, University of Virginia.

In view of the fact that all the meetings of the Society will be held on the grounds of the University of Virginia, either in Cabell Hall or the Medical Amphitheatre, it will be unnecessary to enter into a detailed description of the beauties of the lawn or the additions in size and number of the buildings. Outstanding in the recent developments are the new medical buildings, the dormitories and the new academic building.

Cabell Hall, University of Virginia.

Entrance to Medical Buildings and Hospital, University of Virginia.

The dedication of the million and a half dollar Medical Buildings is to be held with appropriate ceremonies on Tuesday, the twenty-second, in the presence of distinguished guests from all medical schools and a host of returning alumni. This function is being arranged with the hope that a large percentage of the medical alumni of the University will renew friendships, both with each other and with their Alma Mater. The buildings will be open for inspection with guides selected from the present students, so that all may have an opportunity of seeing everything from roof to cellar. Improvements in the hospital will also be observed at the same time. All members of the Medical Society of Virginia are cordially invited to attend these ceremonies, whether University Alumni or not.

The scientific clinics and exhibits will be held in the Medical Buildings.

The institution of dormitory space for a larger percentage of the student body is an innovation which is being watched with keenness by all interested in the growing problems of a University which has always been unique in its principles of handling students. The suites for each two students are most luxurious in comparison with the venerable Lawn and Ranges. Poe would hardly have known what to do with such comfort. These buildings will care for about three hundred students.

The Academic Building fills a long felt want as to lecture rooms and meeting halls. The building stands where the old Mallet House used to be and is architecturally in harmony with the surrounding structures.

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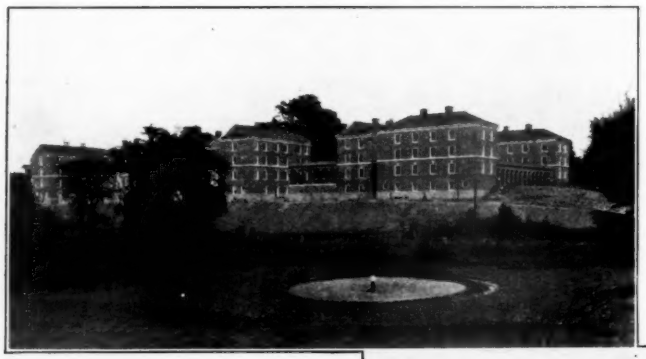
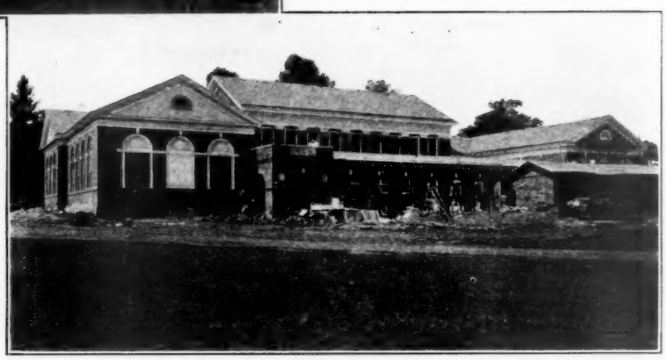


Dormitories, University of Virginia.



Academic Building, University of Virginia.

Memorial Gymnasium, University of Virginia.

The Memorial Gymnasium is one of the largest and best equipped athletic units in the South and with a trained athletic director in charge, and a newly organized system of fees, etc., a real era in athletic progress seems to be well started.

The football teams will be very active in preparation for the big games of the season and will bear inspection by all.

In brief then, you will have an opportunity in October to bask in the beauties of as pretty scenery as exists at the most pleasant time of the year, to visit interesting and historical buildings and estates, to improve your mental and physical well-being, and to establish new acquaintances or review old times with old friends. Every doctor in the State of Virginia should plan to be on hand early on Tuesday and should stay longer than Thursday if possible.

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Miscellaneous

Proposed Amendments to the Constitution and By-Laws of the United States Pharmacopoeial Convention.

The following amendments to the Constitution and By-Laws of the United States Pharmacopoeial Convention are recommended by the Board of Trustees for adoption by the Convention, at Washington, May 13, 1930. Words to be deleted are enclosed in brackets and words to be added are printed in italics:

CONSTITUTION

ARTICLE II

Membership

Section 1. The members of the United States Pharmacopoeial Convention, in addition to the incorporators and their associates, shall be delegates elected by the following organizations in the manner they shall respectively provide: Incorporated Medical Colleges, and Medical Schools connected with Incorporated Colleges and Universities; Incorporated Colleges of Pharmacy, and Pharmaceutical Schools connected with Incorporated Universities; *Departments of Incorporated Universities, which Departments are devoted to scientific research in chemistry or in other lines related to chemistry or pharmacy;* Incorporated State Medical Association; Incorporated State Pharmaceutical Associations; the American Medical Association; the American Pharmaceutical Association, the American Chemical Society, the National Association of Retail Druggists, (and) the National Association of Boards of Pharmacy, *and the Federation of State Medical Boards of the United States;* provided that no such organization shall be entitled to representation unless it shall have been incorporated within and shall have been in continuous operation in the United States for at least five years before the time fixed for the decennial meeting of this corporation.

Medical and Pharmaceutical Associations and Colleges of Medicine and Pharmacy in Hawaii, Porto Rico, the Philippine Islands and in the Republic of Cuba (where the Pharmacopoeia of the United States has been adopted as the official pharmacopoeia) shall likewise be entitled to representation by delegates on the same basis as the other Associations and Colleges mentioned in this Section.

Section 2. Delegates appointed by the Surgeon-General of the United States Army, the Surgeon-General of the United States Navy, and the Surgeon-General of the United States Public Health Service, the Secretary of Agriculture, the Secretary of Commerce, the Association of Official Agricultural Chemists, the Association of American Dairy, Food and Drug Officials, the National Wholesale Druggists' Association, the National Dental Association, the American Drug Manufacturers' Association, *the American Pharmaceutical Manufacturers' Association, the Federal Wholesale Druggists' Association,* the United States Division of Customs.* (and the University of Havana), and by the organizations not hereinbefore named which were admitted to representation in the Convention of 1900, shall also be members of the corporation. Each body and each branch of the United States Government above mentioned shall be entitled to send three delegates to the meetings of this corporation. But no such delegates as are provided for in this article shall be members until their credentials shall have been examined and acted upon as provided for by the By-Laws. Delegates admitted as members at any decennial meeting shall continue to be members of the United States Pharmacopoeial Convention until their successors shall have been appointed and admitted as delegates to the ensuing Convention and no longer.

*Note: It being understood that the University of Havana will be included as a part of the representation accorded to the colleges and associations of the Republic of Cuba and that the elimination of the words "and the University of Havana" is recommended only in the event of the adoption of the new amendment to Section 1.

BY-LAWS

CHAPTER VII

Of the Committees on Credentials and Arrangements

Article I. The Committee on Credentials (and Arrangements) shall consist of five members and shall be appointed by the President from among the delegates to the decennial meeting, not less than two months before the meeting. *The Chairman of the Board of Trustees shall be a member ex officio of the Committee on Credentials.*

Article II. It shall be their duty to examine carefully the credentials of all delegates. *Credentials issued in blank, leaving the names of the delegates and alternates to be inserted subsequently by other than the regular constituted officers of the appointing associations or institutions, shall not be accepted as meeting the requirements of this Chapter.* Immediately before the meeting of the Convention they shall furnish to the President a roll containing the names of the Incorporators, the Officers of the Convention, the Board of Trustees, the General Committee of Revision and of those delegates whose credentials are unquestioned and approved. They shall also make report to the Convention concerning all credentials which have been questioned, or appear to them to be of doubtful validity.

Article III. (This Committee shall continue in office until their successors are appointed). *The Committee on Arrangements shall consist of five members residing in or convenient to the City of Washington, D. C., and appointed by the President,* and shall be charged with the duty of making the necessary arrangements for holding the said decennial meeting. The President, Secretary and Assistant Secretary of the Convention shall be ex officio members of the Committee.

CHAPTER IX

Of Meetings

Article I. The regular decennial meetings of the Convention shall be held upon the second Tuesday in May every tenth year, as provided in the Constitution and the place of meeting shall be in the City of Washington, D. C., *unless, in case of emergency, the Board of Trustees and officers of the Convention, by joint vote, shall select some other place of meeting and some date within the same year other than the second Tuesday in May.* See Constitution, Article V. Twenty-five members shall constitute a quorum.

Article II. Section 4. Report of the Chairman of the Board of Trustees, the Secretary of the Board of Trustees, (and) the Treasurer of the Convention *and the Chairman of the Committee on Revision.*

Section 5. The reports of the Committees on Credentials and Arrangements shall then be considered.

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Woman's Auxiliary, to the Medical Society of Va.

"The Auxiliary Idea."

Mrs. Willard Bartlett, St. Louis, Mo., in her report after four and a half years as chairman of Organization of the Woman's Auxiliary of the Missouri State Medical Association, says that "The natural question is: 'What has the Auxiliary accomplished this time?' We would answer that there has been much that is tangible and much more that is intangible. Perhaps the best impression of this would be had from the notes of appreciation received by the various county auxiliaries, usually from the retiring presidents of the local medical societies."

After giving a few excerpts of the recorded activities of various local auxiliaries and of the State Auxiliary, she says:

"As a result of such activities the Auxiliary is developing a broader friendliness among its membership over the State as well as a large group of women who are intelligently interested in and alive to the problems of health and education of Missouri and the Missouri child. We welcome our widened horizon, with all its implications.

"This resumé would not be complete without a word about that which we call The Auxiliary Idea, a thing less tangible, but just as real as this program of specific activities and so attractive there has been no escaping it. It is a recognition of the value of the common bond of friendship in stimulating the spirit of good will as a basis for all undertakings, a principle that has come to be acknowledged as fundamental, even to all future world relations. The Constitution of the Auxiliary has from the beginning embodied this fact, and we are the richer for it. Its most recent public expression has been voiced by Maude Royden, that outstanding Englishwoman, in commenting on the women of our country. She observes in substance, that to the American woman the idea of service is irresistible, but though filled with a desire to serve, she often fails because, born administrator that she is, she does not perceive that organization alone is not enough, and that no permanent good can be achieved unless the spirit of good will is behind all undertaking. With this as our dominant note for the past four and one-half years, the Auxiliary has been building on a very real foundation."

The Truth About Medicine

In addition to the articles enumerated in our letter of June 29, the following have been accepted:

Abbott Laboratories
Viosterol—Abbott.

Benzol Products Co.
Neocinchophen—B. P. C.

D'ck X-Ray Co.
I-X Barium Meal.

Parke, Davis & Co
Parke, Davis & Co.'s Viosterol.

E. R. Squibb & Sons
Viosterol Squibb 100 D.
Squibb's Viosterol Cod-Liver Oil 5 D.
Squibb's Viosterol Cod-Liver Oil 5 D Mint-Flavored.

Terrell's Laboratories
Rabies Vaccine Phenolized, Terrell.

NEW AND NON-OFFICIAL REMEDIES

Isarol-Ciba.—Sulphonated Bitumen, N. F.—A preparation obtained by dry distillation of bituminous shale. The distillate is sulphonated with sulphuric acid and subsequently neutralized with ammonium carbonate. The product complies wiith the standards for sulphonated bitumen, N. F. It has the actions and uses of sulpholchthyolate preparations and substitutes (New and Nonofficial Remedies, 1929, p. 398). (Jour. A. M. A., July 6, 1929, p. 33).

Ampoules of Pitressin.—An aqueous solution containing the pressor and diuretic-antidiuretic principle of the posterior lobe of the p'tuitary gland (betahypophamine) containing less than 1 unit of oxytocic activity per c.c. It is standardized by the method of Hamilton and Rowe so that each c.c. contains 20 pressor units (1 unit represents the pressor activity exhibited by 0.5 mg. of standard powdered pituitary U. S. P.) This product is used for temporary stimulation of blood pressure, for increasing the muscular activity of the bladder and intestinal tract, also for antidiuretic effect in diabetes insipidus. It is marketed in 1 c.c. ampoules. Parke, Davis & Co., Detroit.

Ampoules of Pitocin.—An aqueous solution containing the oxytocic principle of the posterior lobe of the pituitary gland (alphahypophamine) containing less than 0.5 unit of pressor activity per c.c. It is standardized by the U. S. P. method for pituitary, each c.c. containing 10 International units. This product is used to stimulate uterine contractions for obstetric purposes. It is marketed in 1 c.c. ampules. Parke, Davis & Co., Detroit. (Jour. A. M. A., July 13, 1929, p. 117).

Book Announcements

Methods and Problems of Medical Education. Thirteenth Series. The Rockefeller Foundation, 61 Broadway, New York, N. Y. 1929. 141 pages. Illustrated. Paper.

United Fruit Company, Medical Department. General Office: Boston, Massachusetts. Office of Medical Department: 17 Battery Place, New York City. Seventeenth Annual Report. 1928. 381 pages. Illustrated. Paper.

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VOL. 56 SEPTEMBER, 1929 No. 6

Editorial

"As Mere Flourishes."

Recently, William Lyon Phelps, noted editor, has aptly written of an author's book, under review: "There is a charming frankness, a directness and unaffected simplicity . . . that we might well imitate, if we can, in actual life . . . where each speaker assumes that the other is both sincere and interested in the subject; hence there is no necessity for saying a lot of things as mere flourishes or gradients."

It seems that this paragraph points to one of the clear needs of today in medical discussions and medical meetings. Effort even should be made to avoid the vanity of "mere flourishes and gradients," and to speak simply, naturally, and to the point, using a modicum of humility and eschewing the mien of one as possessed of a limitless fund of knowledge, experience and wisdom.

It seems much to be desired that, in the discussion of medical topics, on the medical lecture platform, on the floor of medical meetings, or in the consultation room, medical speakers, avoiding mere flourishes of speech and leaning in matter of discussion toward an unaffected simplicity, should endeavor to present their points of view. For after all, who is it who knows a great deal; who possesses the greatest of wisdom? May we not read and meditate upon the tomes of written medical literature or publications and sit in medical conventions for untold hours and come to the conclusion that while there is enough for all to be immensely proud of in the achievements of our times, there are numberless problems unsolved and that there is much confusion and indirectness in medical publications and discourse, and that there is little place for "mere flourishes and gradients," but a large place for simplicity and frankness if the larger advance in the spread of medical knowledge is to be made.

The Charlottesville State Meeting.

At Charlottesville, on October 22, 23, and 24, the State Medical Society will hold its annual convention. It is particularly auspicious that the profession of this locality has arranged to house the convention at the University of Virginia and to inaugurate the occasion by ceremonies of dedication of the great new medical building that has so lately been completed there. The comfort of the adequate meeting halls and committee rooms is assured by this arrangement. The great pleasure and profit of attending upon the exercises, listening to the discourses of distinguished invited guests, and inspecting the modern equipment and layout of the modern hospital recently erected at the entrance to the University grounds, make for an assurance of peculiar success in this meeting of the Medical Society of Virginia. Besides these attractions, the prospect of the social gatherings and entertainments during the meeting offer enticements that need no elaboration in these columns.

The usual program of volunteer papers that affords members an opportunity to listen to the reading of papers on medical topics and to participate in the discussion of papers on the floor, gives promise of being of high order.

Hotel accommodations in Charlottesville may be taken to be adequate. But it is advisable, it would seem, that members should provide early reservations for themselves as the indications are that a large attendance will mark this meeting of the Medical Society of Virginia.

Dr. L. T. Royster is General Chairman of the Albermarle County Medical Society Committee. Dr. W. H. Goodwin represents the University of Virginia on this Committee. This joint action of these bodies assures for the members in attendance every arrangement for a successful convention.

The Medical Society of Virginia of 1823.

There is evidence of the existence and operation of a Medical Society of Virginia that received its charter in 1823. It seems in-

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deed a matter of reasonable interest that the present society of medical men in Virginia should have more accurate record of the origin, officers, and history of this early organization. Our Society in its publications only claims a lineal history of sixty years while there is evidence of a charter to the Medical Society of Virginia over one hundred years ago: in 1823. It is desirable that a reasonably earnest and complete search should be made into the archives of Virginia in order to trace the history of this older medical society which must have been the parent society of the one now in existence. A diligent search, by a person versed in the art of genealogic inquiry, may be able to discover the origin of this older medical society. In this story we moderns may at least be given opportunity to do honor to the memory of these fathers in medicine in early Virginia. It is hoped that the Society will see fit to engage the services of a competent person under its History Committee for the purpose of tracing the life history of this early Medical Society of Virginia of 1823.

In this connection our readers will be interested in a notice which appeared under MEDICAL NEWS OF THE PAST in the August issue of the Monthly. The information was secured from a directory of Richmond published in 1852.

United States Pharmacopoeial Convention of 1930.

On May 13, 1930, the United States Pharmacopoeial Convention will convene in Washington, D. C., to organize, and, then to engage in the work of revision of the United States Pharmacopoeia. This convention meets only once in ten years. The membership of the convention is made up of representatives from certain societies and organizations. These organizations by election or appointment send delegates who serve as members of the United States Pharmacopoeial Convention until their successors shall have been appointed or admitted to the ensuing convention, and no longer.

The Constitution provides that certain medical and kindred organizations shall compose the group of organizations entitled to representation. Amendments to the Constitution and By-Laws of the United States Pharmacopoeial Convention must be first favorably voted upon by the Board of Trustees and published in medical and pharmacopoeial journals before they can be considered or adopted by the Convention. The Medical Society of Virginia must designate its delegates at its coming meeting. Our readers, therefore, are requested to read with care the report of the amendments, to be found on page 417 of this Journal, which have been favorably voted upon by the Trustees and which will come up before the next meeting for adoption.

This important instrument of the medical and pharmaceutical professions bears an honorable history that every patriotic member of these allied professions and departments of knowledge should revere and cherish. The story of the history of the United States Pharmocopoeia reaches far into the early years of this Republic but only a meager reference to this notable piece of medical history can be made in this comment. While the first *official* Pharmacopoeia was published in 1820, in 1778 during the American Revolution, there was published at Philadelphia a Pharmacopoeia for the use of the Military Hospital of the United States Army, located at Lititz, Lancaster County, Pennsylvania, under the title: "Repertory of Simple and Efficacious Prescriptions for the Use of the Military Hospital Belonging to the Army of the United States of America. Adapted especially to our present state of need and poverty, which we owe to the ferocious cruelty of the enemy, and to the cruel war brought unexpectedly upon the Fatherland." The author of this historic first pharmacopoeia was William Brown, M. D., of Alexandria, Va., then Surgeon General of the Middle Department of the Army of the American Revolution. Again, prior to the appearance of the first official Pharmacopoeia, in October, 1805, the Massachusetts Medical Society appointed a committee composed of Dr. James Jackson and Dr. John C. Warren to draft a Pharmacopoeia, but this was not published until 1808. This was based upon the Edinburgh Pharmacopoeia. Again, in 1816, physicians and surgeons of New York prepared and published a Pharmacopoeia and this served a useful local use for the next few years.

The first official Pharmacopoeia, with Dr. Lyman Spalding, as chariman, was published in Boston, December 15, 1820. It appeared in both Latin and English and a second printing was made of it in 1828. The first revision

of this work appeared in 1830: the second revision appeared 1842; a convention held in Washington in 1850, issued the third revision in 1851: the fourth revision appeared in 1863; the fifth revision appeared in 1873: the sixth was published in October, 1882: the seventh revision was published in September, 1893: the eighth, the "Eighth Decennial Revision" was ordered by a convention held in Washington, D. C., May 2, 1900. The incorporation of the Convention in the District of Columbia was accomplished July 7, 1900, but the Revision was not published until 1905: the ninth revision appeared in 1916; and the tenth Decennial Revision (U. S. P. T.) became official January 1, 1926; and now, the eleventh revision comes up at the next meeting in Washington on the 13th of May, 1930.

Death From Diabetic Coma.

Since the coming of insulin, death by coma in diabetes is becoming more and more rare. This is as it should be. As the insulin-dietetic management of this disease becomes more and more generally adopted in practice by the rank and file of the profession, death by coma in diabetes must necessarily become rarer. Because experience has shown it to be true that, in the hands of those who have had opportunity to treat a large number of cases of diabetes in all of the stages and types of the disease and at all ages of life, coma is preventable: further, that if it be present, under adequate, persistent and heroic efforts, death from coma can be prevented. So it is assuming somewhat a state of profession-opinion now-a-days that death by diabetic coma should not occur often and will occur less and less as modern treatment supplants the old. This may be stating the trend of opinion rather strongly, but is made, in order to emphasize a point and to draw a reasonable conclusion from the present state of our knowledge in the management of coma in diabetes. In the category of disease, probably no better example of the advance of internal medicine can be given. The masterful and the miraculous control of this disease is evident to all, as has been shown by the dietary-insulin treatment of diabetes mellitus and its complications, particularly juvenile diabetes and coma—a thousand year old human disease.

Prompt hospitalization of coma patients and of severe diabetic patients generally seems urgent. Patients in a coma may be transported, and should be, rapidly to the hospital where emergency treatments may be instituted and where pathologic examinations of more or less technical nature may be carried out as a guide in emergency and provide a plan for a prolonged treatment of such cases. Of course, with automobile transportation easily available over the country, ready transportation can be had at any time. In the case of coma, insulin and fruit juice administration in the presence of serious coma symptoms may be practiced frequently with little risk either of over-insulin dosage or infection.

Diabetics have a remarkable security in the action of insulin. Few of them appreciate in any real way the importance of insulin and diet. Some diabetics break the diet and discontinue the insulin because of a feeling of a sort of well-being and these quickly may become overpowered with acidosis and coma. While diabetes is a chronic malady, the dreadful complications that accompany it and follow in its train are emphatically acute and dire. Coma, signalizing its approach often by indefinite feelings, a sort of illness or sickness, loss of appetite, pain in abdomen, difficult and noisy breathing, mental sluggishness, drowsiness, like a stealthy and sly wolf of the night may slip in upon the self-complacent diabetic, who unwontedly discontinued the insulin and broke away from the rules of diet. The margin of safety of the chronic diabetic from the brink of acute coma is very small and the danger is ever imminent. The situation of acid poisoning and coma in the light of our present knowledge of the use and efficiency of insulin administration demands of the physician a full-time attendance. He cannot leave a diabetic patient in coma. He must keep up a continuous fire upon the enemy-poison. If hospital equipment and hospital aid, such as interns, nurses, and dietitians, are not available and the patient cannot be transported by automobile to these great aids of treatment, the physician, himself, with such local help as possible, must lead the unremitting attack.

The differences of minor details in the general plan of treatment of diabetic coma are unimportant. The following headline measures usually are adhered to: (1) insulin administration according to the severity of the symptoms; it may be 10 to 40 units every half

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hour; intravenously and hypodermically according to severity of symptoms. (2) Water. Dehydration of the patient makes for an aggravation of poison action and relation—water in and through the patient is needed. Water by the mouth may be used if possible, but intravenous and subcutaneous administration of normal saline, under certain conditions, is demanded. (3) Remember the heart. Remember that through the coronary circulation courses the same high blood sugar and acid poisoning. Heart action must be supported—caffein, sodiobenzoate, 7½ grains every three to four hours for limited doses, may be given. (4) Diet. Starvation must be stopped. Fruit juices, glucose, and other carbohydrates should be given until ugly symptoms are relieved.

News Notes

Our State Meeting in Charlottesville.

The center of all medical activities during the Society meeting in Charlottesville, October 22nd, 23rd and 24th, will be at Cabell Hall, located at the south end of the Lawn at the University. Here will be located the registration booth, the commercial exhibits and the meeting hall for all the scientific papers. The only functions away from Cabell Hall will be the clinics and the scientific exhibits which will both be held in the new medical buildings just a few minutes' walk across the grounds.

The Cafeteria is located almost in front of Cabell Hall, just off the grounds to the west, where wholesome sustenance may be acquired at cost. A number of lunchrooms also can be found at or near the corner.

The meeting places may be closely reached either by street car, automobile or on foot. Sufficient and suitable parking spaces will be arranged for and will be properly supervised. The street car service will be augmented by more cars, so that those desiring to ride on the electric cars can be assured of fairly frequent service.

The necessity of making your hotel reservation early cannot be over-emphasized. The hotels are even now receiving numerous requests for space and have been since July, so that you should get your name in early. Accommodations in private homes and boarding houses will be available and can be arranged for by writing to Dr. W. D. Macon, Charlottesville, Va.

Club privileges can be arranged for anyone desirous of trying out the new golf course or other attractions at Farmington. Bring your clubs, play in the tournament, and then stay over and see if you can improve on your score.

Owing to the celebration incident to the opening of the new Medical School Buildings at the University of Virginia, on October 22nd, this meeting promises to be of unusual interest. Several noted and excellent speakers have been selected by the University Committee for this event. Following the dedication exercises, the University will give a luncheon to which are invited not only the guests, but also all members of the State Society and the ladies accompanying them.

Tuesday afternoon, from 4:30 to 6 o'clock, there will be medical and surgical clinics in the Medical School Buildings.

That evening, at 8:00 P. M., there will be a joint session of those taking part in the University exercises and the Medical Society of Virginia. Addresses will be made at this time by Dr. J. Bolling Jones, Petersburg, President of the Society; Dr. Hugh S. Cumming, Surgeon General of the U. S. Public Health Service (also a member of the Medical Society of Virginia); and Dr. Charles R. Stockard, of the Cornell Medical School.

In spite of a rather full day for the scientific program on Wednesday the 23rd, time will be taken off at 4:30 P. M. for a barbecue at Farmington Country Club. This is likewise for guests, members and the ladies accompanying them.

A golf tournament will be held on Thursday the 24th.

All round, this is to be a fine meeting and all our members will feel fully repaid in taking time off to attend. Be sure to bring the ladies with you. Once again we urge that you make reservations promptly. The dates are October 22nd, 23rd and 24th.

Southern Medical Association.

Closely following our own State Society meeting comes the annual sessions of the Southern Medical Association. This year that Association will convene in Miami, Fla., under the presidency of Dr. Thomas W. Moore, of Huntington, W. Va. Following the meeting in Miami, arrangements are being made for

an official S. M. A. trip to Cuba. This should prove a delightful postlude for those who can take an early winter vacation. Mr. C. P. Loranz, secretary-manager of the Association, Empire Building, Birmingham, Ala., will gladly supply information about the coming meeting.

The American College of Surgeons

Will hold its annual Clinical Congress in Chicago, October 14th-18th. Headquarters will be at the Stevens Hotel. An intensive program is being planned to make this homecoming event the greatest in the history of the College. The Hospital Standardization Conference will consist of morning and afternoon sessions on Monday to Thursday inclusive. There will be a series of clinical demonstrations given by Drs. George W. Crile, Cleveland; John B. Deaver, Philadelphia; John M. T. Finney, Baltimore; Charles H. Mayo, Rochester, and others. Monday evening's program will include the address of the retiring President, Dr. Franklin H. Martin, Chicago, the inaugural address of the new President, Major-General Merritte W. Ireland, Washington, D. C., and the John B. Murphy Oration in Surgery by Professor D. P. D. Wilkie, of Edinburgh.

Tuesday, Wednesday, and Thursday evening sessions will consist of scientific papers presented by surgeons from the United States, Canada and from abroad. The Annual Convocation of the College will be held on Friday evening. The annual meeting of the Governors and Fellows will be held Thursday afternoon followed by a symposia on cancer and bone sarcomoa. An all day session on Traumatic Surgery will be held on Friday in which leaders in industry, labor, indemnity organizations and the medical profession will participate. A special program has been arranged that will be of interest to those whose practice is limited to surgery of the eye, ear, nose and throat.

A feature of the Congress will be the showing of surgical films that have been produced under the supervision and approved by the Board on Medical Motion Pictures of the College. New developments in color photography will be demonstrated. In addition to the commercial exhibits, there will be scientific exhibits by the departments of the College.

A rate of one and one-half the regular one way fare has been granted on railroads of the United States and Canada to those holding convention certificates.

Married.

Dr. Richard H. Holt, Middleburg, Va., and Miss Mildred A. Derby, Kingston, Md., at Rehoboth, Md., June 20th.

Dr. A. Merle Showalter and Mrs. Charles Craig, both of Christiansburg, Va., in Roanoke, August 11th.

Dr. Fred M. Hodges and Miss Louise Maury Anderson, both of Richmond, Va., September 3rd.

Dr. William Russell Jones and Mrs. Anna Simmons Talley, both of Richmond, Va., August 17th.

Dr. William Linwood Ball and Miss Mary Louise Pamperin, both of Richmond, Va., August 5th. Dr. Ball is an alumnus of the Medical College of Virginia, in the class of '27.

Dr. Luther Rush Lambert, Fairmont, W. Va., of the class of '24, Medical College of Virginia, and Miss Marion Clay Whitman, Wytheville, Va., September 4th.

Dr. Edmund Eugene Robinson, Concord, N. C., and Miss Mildred Eaves, in June. Dr. Robinson graduated from Medical College of Virginia in 1927 and served an internship at Memorial Hospital, Richmond.

Dr. Claude Linwood Neale, of the Walter Reed General Hospital staff, Washington, D. C., and Miss Frances Evelyn Majors, of Dallas, Texas. Dr. Neale was formerly of Saluda, Va., and graduated from Medical College of Virginia in 1928.

Dr. William Albert Graham, Hillsboro, Ky., and Miss Lucy Alston Williams, Warrenton, N. C., August 31. Dr. Graham graduated from Medical College of Virginia last June and was appointed one of the interns at Memorial Hospital, Richmond.

Dr. Frank F. Sowers,

Fairmont, W. Va., of the class of '27, Medical College of Virginia, has been appointed health officer of Marion County, West Virginia, succeeding Dr. Howard M. Batson, also an alumnus of the Medical College of Virginia, who has located in New Mexico. Dr. Sowers took a special course in public health work at the Rockefeller Foundation Training School in Indianola, Miss., before entering upon his new duties on September 1st.

Dr. E. L. Kendig,

Victoria, Va., has been chosen general demo-

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cratic chairman of Lunenburg County for the coming election.

Dr. G. F. Simpson,

Purcellville, Va., was recently elected a member of the Loudoun County democratic committee.

Poverty Affects School Work—A German Opinion.

The poorer the family the poorer in general is the quality of the school work of the children. This is the conclusion reached by a German investigator as the result of a study of about 800 children eleven to fourteen years of age coming from families of moderate or low income and attending public schools in two German cities. About half the children of unskilled workers in the lower school grades and a still larger proportion in the higher grades were found to be retarded. This condition was attributed by the investigator to the prevalence of faulty hygiene, disease, and physical weakness among the poorer families, as well as to inherited lack of ability, which in the parents had kept them in the ranks of the less skilled workers.

Dr. J. Morrison Hutcheson,

Of Richmond, Va., delivered an address on "Heart Pains," at the recent meeting of the Northampton County Medical Society, held at the Northampton-Accomac Hospital, Nassawadox, Va. Dr. S. K. Ames and Dr. J. M. Lynch, both of Cape Charles, are president and secretary of the Society, respectively.

Dr. Emily Gardner,

Who has been studying in New York, is now at Babies' Hospital, New York City, for several months. Before going off for this special work, Dr. Gardner was with the Child Welfare Department of the Virginia State Board of Health.

Dr. A. Warren Rucker,

An alumnus of Vanderbilt University, has recently located at Fieldale, Va.

Dr. W. B. Dudley,

Martinsville, Va., is doing post-graduate work in diseases of the eye, ear, nose and throat, in Chicago.

No Toothache for These Children.

The children of Sharkey County, Miss., are not to suffer from toothache if the county Red Cross chapter can prevent. This body is sponsoring a school dental clinic, and it has made sure of community cooperation by placing the clinic under the direction of a committee composed of the school principals, a parent from each community, the county health officer, the Red Cross chapter executive, and the dentist. The physicians of the county are also taking an active interest. About 1,100 children, it is expected, will be treated this year at a total cost of approximately $1,100. A banner will be awarded to each school as the dental work for the children is completed.

Virginia T. B. Association to Meet in Roanoke.

Roanoke has been chosen as the place for the next annual meeting of the Virgiina Tuberculosis Association, in February, 1930. The meetings of the Association have always been held in Richmond since its organization in 1909, but at the last annual meeting an invitation to meet in Roanoke was extended by the Roanoke Chamber of Commerce and representatives from that section of the State urged that it be accepted. After some discussion, the matter was left to the decision of the executive committee which recently voted to hold the meeting at Roanoke.

Plans are being made by the Association to secure two speakers for the occasion who have national reputations and are considered authorities on their subjects.

Dr. Sidney L. Scott,

Fredericksburg, Va., recently visited Greenwich, Conn., where, at the request of the Robert E. Lee Memorial Foundation, he appeared at a meeting for the purpose of discussing the arranging of illustrated lectures on Stratford (ancestral home of the Lees in Westmoreland County, Va.) and other historic places about Fredericksburg, to be delivered all over the country. Dr. Scott will prepare and deliver the first lecture at Greenwich, after which an employed lecturer will probably take it over.

The American Society of Clinical Pathologists,

At its annual meeting in Portland, Ore., in July, elected Dr. Kenneth M. Lynch, Charleston, S. C., president-elect. Dr. James H. Black, Dallas, Texas, succeeded to the presidency and Dr. Harry J. Corper, Denver, Col., continued as secretary-treasurer.

Utopia Children's House in Harlem.

Over 1,600 luncheons were served last January to undernourished negro children at Utopia Children's House in Harlem. This child-welfare center was made possible by a gift from John D. Rockefeller, Jr., after the

report of a joint committee on negro child study disclosed the need for it. More than 400 children are registered in the twenty-six activities now carried on at the center.

Dr. R. D. Kimbrough,

University, Va., is spending some time at Tucker House, Williamsburg, Va.

Dr. Gladys Smithwick,

Of the class of '25, Medical College of Virginia, recently at Oakdale, Ia., is now at Wallum Lake, R. I., where she is doing chest work.

Petersburg Active in Health Matters.

The report just issued by the Department of Public Health of the City of Petersburg for 1925, 1926, 1927 and 1928, shows a large amount of health work accomplished for a city of slightly less than 38,000. Dr. Robert A. Martin is health officer. Other doctors connected with the Health Department are: Drs. Mason Romaine, C. T. Jones, Geo. H. Reese, W. A. Reese, W. I. Prichard and E. W. Young, while Drs. E. L. McGill, Jos. D. Osborne, L. S. Early and Meade Edmunds render volunteer service.

Dr. R. A. Vonderlehr,

Passed Assistant Surgeon of the U. S. Public Health Service, and a member of the Medical Society of Virginia, after a service in Irish Free State and later at Southampton, England, has been transferred to Hamburg, Germany, his address being care the American Consulate in that place.

Dr. J. L. Blanton,

Recently located at Fieldale, Va., is taking post-graduate work in pediatrics in Boston.

Lend Your Vacant Lots for Playgrounds.

Detroit, Los Angeles, Pittsburgh, Orlando (Fla.,) and Hamilton (Ont.) are among the cities which have public playgrounds on vacant lots lent for the purpose by private individuals or corporations, reports the Playground and Recreation Association of America, New York City. In return for the use of these pieces of ground partial or entire exemption from taxes is granted, a nominal yearly rental being sometimes also paid. In this way the children often have had playgrounds before the cities have been in position to acquire ground for the purpose, and the owners have saved an important part of the cost of carrying vacant land.

Dr. A. L. Herring,

Richmond, Va., attending surgeon and part owner of Grace Hospital, announces the removal of his office to 407 West Grace Street, this city.

Dr. T. B. Washington is associated with Dr. Herring and is urologist to Grace Hospital.

Dr. George W. Booth,

Recently of Callaway, Va., has located in Ferrum, Va., for the practice of his profession.

Dr. John B. Bullard

Has resumed his practice at 1100 West Franklin Street, Richmond, Va., after visiting for the past few months the Bronchial Asthma and Hay-Fever Clinics in Boston, New York City, Philadelphia and Baltimore. Dr. Bullard will be the chief of the Allergic Department at the Medical College of Virginia—a newly organized branch of the Medical Department.

Los Angeles Summer Health Schools.

For the fifth year Los Angeles County, Calif., is conducting summer health schools for children of 6 to 11 years who are undernourished or who have been definitely exposed to tuberculosis or other infectious diseases. No child actually ill is admitted, and only those are enrolled whose parents consent to attend weekly conferences. School buildings are used for the purpose, and the children attend for the usual school day. They are under the supervision of nurses, physicians, dietitians, and physical therapeutists, and their daily program consists of sun baths, supervised recreation, rest periods, and luncheons. Last year 75 per cent of the 500 children who were given this health training were found eight months later to have retained the gains they made. The expense of the health schools is met in part by contributions from fraternal and other organizations.

Dr. O. E. Bevins,

Dungannon, Va., suffered a fracture of the left humerus as the result of an automobile accident early in August.

Prize Offered by American Association for Study of Goiter.

The Executive Council of the American Association for the Study of Goiter announces that a prize of three hundred dollars ($300) and a medal of honor will be awarded by the Association to the author of the best essay based upon original research work on any phase of goiter, presented at their annual meeting at Seattle, Wash., in September, 1930.

Competing manuscripts must be in the hands of the Corresponding Secretary, Dr. J. R.

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Yung, Rose Dispensary Building, Terre Haute, Ind., by July 4, 1930, so that the award committee will have sufficient time to thoroughly examine all data before making the award.

Full particulars of other regulations governing details of the offer will be furnished on application.

The Southwestern Virginia Medical Society

Will hold its next semi-anual meeting at Galax, Va., September 16th and 17th, under the presidency of Dr. A. M. Showalter, of Christiansburg. Dr. E. G. Gill, Roanoke, is secretary-treasurer. Dr. John Bell Williams, Business Manager of McGuire Clinic, Richmond, as invited guest, will speak on "A Medley of Methods of Hospital Management." In addition to this, there are scheduled a number of interesting papers by members.

Dr. George H. Reese,

Petersburg, Va., is home again after a vacation spent visiting in Southern California and later at the Mayo Clinic, Rochester, Minn.

International Congress on Mental Hygiene.

President Hoover has accepted the honorary presidency of the First International Congress on Mental Hygiene, which will open in Washington, D. C., May 5, 1930. Among the questions to be discussed will be the specific application of mental hygiene to the maladjustment problems of individuals. Special attention will be given to problems of early childhood and adolescence.

Commonwealth Fund Scholarships.

The Commonwealth Fund of the United States is offering a limited number of scholarships for the course of training in mental-hygiene work being organized at the London School of Economics and Political Science. Lectures will be given in psychiatry, psychology, and social case work, and opportunity for practical work under skilled supervision will be offered at hospitals and clinics, especially the child-guidance clinics. Applicants for the course must be over 25 years of age, must have social-science certificates from a university, and be experienced in some form of social work.

Dr. J. B. Muncy,

Formerly of Jonesville, Va., has located in Pennington Gap, Va. Dr. Muncy recently returned from Philadelphia, where he spent some months taking post-graduate work in obstetrics and gynecology at the University of Pennsylvania Graduate School of Medicine.

The American College of Physical Therapy

Is to hold its clinical congress and annual meeting in Chicago, November 4-7, 1929, with headquarters at Hotel Sherman. One of the novel features to be inaugurated this year is the clinical part of the program. One-half of each day will be devoted to a variety of clinics in the sections on Medicine, Surgery and allied specialties, and Eye, Ear, Nose and Throat. As in the past, there will also be a joint meeting of all sections for the presentation of numerous addresses of interest to all physicians irrespective of their specialties. Scientific papers, clinical addresses, demonstrations of technique, and scientific and technical exhibits, will comprise the remainder of a scientific program which merits the attention of all those interested in the newer fields of medicine. Attendance at the congress is not limited to the fellows of the College, as all duly licensed physicians, their technicians and assistants, properly sponsored, are cordially invited to attend all the sessions.

Program and other information may be obtained by writing to the Executive Offices, American College of Physical Therapy, Suite 716, 30 N. Michigan Avene, Chicago, Ill.

Fraternity Memorial Hospital, Tokyo.

Built and endowed with money left over from the Japanese earthquake relief fund contributed by the people of the United States in 1923 and 1924, the Fraternity Memorial Hospital was dedicated in Tokyo on June 1st. It is probably the finest hospital in Japan. The Japanese committee administering the fund had already used part of the earthquake money to build a small hospital in Yokohama, which was opened in 1928 on the fifth anniversary of the disaster, and to establish a training school for nurses from which 100 Japanese women nurses have been graduated ready for duty in the new hospital. This institution will give free care and treatment to persons recommended for admission by the police and sanitary authorities and by family physicians.

Dr. Fred Y. Ketner,

Of the class of '28, Medical College of Virginia, having just completed his intern service, has located at Sandston, just outside of Richmond, Va., for the practice of medicine.

Dr. and Mrs. W. C. Caudill

And son, Pearisburg, Va., narrowly escaped

death a few days ago, when their auto left the road and turned over in Peak Creek on the Lee Highway, just east of Pulaski, Va. They were able to keep just their heads out of water until a wrecking car could be summoned and extricated them. They escaped serious injuries.

The American Dietetic Association

Will hold its annual meetnig in Detroit, Mich., October 6th-11th, under the presidency of Miss Anna E. Boller, of the Central Free Dispensary of Chicago. Information about this meeting may be obtained from the secretary, Miss Quindara Oliver, 122 Riverway, Suite 20, Boston, Mass.

Dr. and Mrs. Hunter H. McGuire,

Winchester, Va., have gone to Amsterdam and The Hague, where Dr. McGuire attended the International Congress on Ophthalmology, which was to hold sessions in both places. They will also spend sometime in England before returning home.

The Interstate Post-Graduate Medical Association of North America

Will meet in Detroit, Mich., October 21st-25th, under the presidency of Dr. John B. Deaver, of Philadelphia. A program including men of international prominence has been arranged. Information about the assembly may be obtained from the managing director, Dr. William B. Peck, Freeport, Ill.

Italy Protects Mothers.

By a decree of May 13, 1929, the employment of women engaged in manual and clerical work in Italy is prohibited during the last four weeks of pregnancy and for the first four weeks after the birth of the baby. The law also provides that the mother's position must be reserved for her during this period (and for three months longer if longer rest is necessary); it grants a confinement benefit of 150 lire (about $8), and in the case of women subject to unemployment insurance, including large groups of manual and clerical workers, it grants also a weekly sum equal to the unemployment benefit. The nursing mother on returning to work must be given two special daily rest periods of one hour each until her child is a year old. Fines are prescribed for violations.

Dr. E. T. Trice,

Richmond, Va., announces removal of his offices to 407 West Grace Street, this city. He is an attending surgeon at Grace Hospital and will limit his practice to surgery and gynecology.

Tularaemia a Possible Infection in Game Birds.

The possibility that tularaemia infection might be the causative factor in epidemics that effect native species of game birds in various sections of the United States has been suggested. If tularaemia were so concerned, the matter appears to be one of some importance because of the resultant danger of human infection and as a possible factor in game bird abundance. Results of studies conducted so far by the United States Public Health Service have not been completed. However, it has been shown that quail are susceptible to the infection of tularaemia and that they may suffer from the disease.

Two human cases of tularaemia have been reported (one in North Carolina, the other in Tennessee) which indicate that the source of infection may have been quail. Although these studies are not yet completed, it is of importance that quail as a possibility of a source of infection for tularaemia, be borne in mind.

Dr. Gordon Hastings,

Of the class of '26, Medical College of Virginia, recently a Field Staff member of the Rockefeller Foundation, has been appointed director of Rural Sanitation for the State of Arkansas, with headquarters in the State Capitol Building, Little Rock. Dr. Hastings interned at Stuart Circle and City Home Hospitals, Richmond, and also served with the U. S. Public Health Service, prior to his graduation in medicine. He was also at Stuart Circle Hospital for a year following his graduation.

Why Sleep? Sleep Helps Children Grow.

This little folder on sleep issued recently by the United States Children's Bureau calls especial attention to the importance of longer hours of sleep for the adolescent boy and girl, 13 to 15 years of age, than are needed by children a year or two younger. Every one knows the importance of prolonged sleep for babies and young children, which is necessitated by their very rapid growth; but many parents are unaware that the rapid growth and development of adolescence increases the need for sleep, and that children at this period are often listless and unable to concentrate on their lessons simply because they do not get the extra sleep they need.

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"Economic Services of the Metropolitan."

An interesting brochure which details the major activities of the Metropolitan Life Insurance Company has been published under the title, "Economic Services of the Metropolitan Life Insurance Company." The Service Bureau of that organization, formed to aid holders of Metropolitan policies, has taken full advantage of its strategic position and through many of its activities has proven a definite aid to manufacturing, commerce and finance in the United States, and to the public in general. This report contains many items of interest to business men in every classification.

A copy of it may be obtained by writing to the Policyholders Service Bureau, Metropolitan Life Insurance Company, One Madison Avenue, New York City.

Dr. George W. Parson,

Formerly of Raven, Va., after three years' post-graduate work as a Fellow in the Mayo Foundation, Rochester, Minn., is now located at 906 Medical Arts Building, Kansas City, Mo., where he is associated with Dr. Peter T. Bohan in the practice of internal medicine.

Dr. Charles C. Haskell,

After a service of some years at Medical College of Virginia, Richmond, as professor of Physiology and Pharmacology, tendered his resignation, effective July 1st, to undertake research work for the Ciba Company, of New York City. Prior to entering upon his duties there, he made an inspection visit to the home offices of this Company in Europe.

The chair of Physiology at the College will be headed by Dr. W. R. Bond, as assistant professor, and that of Pharmacology by Dr. H. V. Haag, in the same capacity. Both of these men have worked under Dr. Haskell in these departments.

Dr. Sam Wilson,

Lynchburg, Va., is spending sometime at Harvard University where he is taking post-graduate work in diseases of children. Upon completing his work there, he will observe methods in pediatrics at Johns Hopkins University before returning home.

Civil Service Examinations.

The U. S. Civil Service Commission, Washington, D. C., announces the following open competitive examinations, applications to be rated as received until December 30th:

Associate medical officer and assistant medical officer;

Physician and associate physician;

Social worker (psychiatric) and junior social worker.

Further information about these may be obtained from above named Commission.

Graduate Fortnight.

The New York Academy of Medicine announces its second annual Graduate Fornight to be held October 7th to 19th, 1929. Headquarters will be at the New York Academy of Medicine, Fifth Avenue and 103rd Street, New York City, for registration, information and clinical assignments. The profession generally is invited to attend. It is stated that "No fees will be charged for registration or for attendance at any of the clinics or meetings on the program."

The Academy extends a welcome to all members of the medical profession who may visit New York. It offers its facilities in the hope that they may be helpful in making the visitors' stay both pleasant and profitable.

For Sale or Lease—

Modern fireproof hospital, capacity 40 beds, fully equipped. Also has medical library. Open for inspection at any time. Located near good roads in progressive town. Attractive proposition to right party. Write "X. Y. Z.," care VIRGINIA MEDICAL MONTHLY, Richmond, Va. (*Adv.*)

Obituary Record

Dr. Oscar Grant Pearson,

Of Venter, Va., died at his home in that place, August the 8th., at the age of sixty-one years. Dr. Pearson was a native of Illinois and graduated in Medicine from Rush Medical College, Chicago, in 1891. He located in Virginia about fifteen years ago. He was a member of the Mid-Tidewater Medical Society and of the Medical Society of Virginia. He was also a Mason and Shriner. His wife and two sons survive him.

Dr. Benjamin Meade Bolton,

Former Virginian and a graduate in medicine from the University of Virginia in 1879, died at his home in New York City, August the 12th. Dr. Bolton was a prominent bacteriologist and had devoted much of his time to teaching. His wife and three children survive him.